UK Civil Aviation Authority

Consumer Environmental Information: Call for Evidence

Summary of Responses

CAP 3009

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Executive Summary

1. The Civil Aviation Authority (CAA) set out in its Environmental Sustainability Strategy[1] its proposals for providing environmental information to consumers.

2. Our objective is to ensure that consumers get environmental information, at the point of planning and booking their flights, that is accurate, understandable, standardised, comparable, accessible and useful, so that they can trust it to make informed choices about their travel arrangements.

3. We published a Call for Evidence in January 2023 to seek a range of views to inform our policy design and implementation on aviation consumer environmental information from (amongst others) the aviation industry, consumer groups, academics, environmental groups, the public, and holders and users of aviation environmental information.

4. We are grateful to the respondents to that Call for Evidence for the level of detail provided in their responses and for their ongoing engagement on this subject. We look forward to continuing this engagement as this work progresses.

5. We recognise that since the Call for Evidence closed, there has been progression in work undertaken by other organisations on consumer environmental information as well as changes to organisation names and websites. The responses summarised in this document are reflective of submissions provided in Q1 2023 and may not reflect the current situation in 2024 at date of publication.

6. It is clear from the responses received that there are a range of perspectives and priorities that must be considered when undertaking policy decisions in this area.

7. We received 122 responses to our Call for Evidence from 44 organisations and 78 individuals.

8. The key themes of the responses were:

[1] CAA's environmental sustainability strategy, May 2022 www.caa.co.uk/media/egul5yds/2360-caa_env-sus-stategy_v6-2- front.pdf

- Feedback on existing methodologies and projects on aviation environmental information developed by other organisations including ICAO, EASA, IATA, Google and the Travalyst coalition. Many respondents were keen that the CAA's work in this space should complement rather than contradict existing ongoing work.
- Broad support for encouraging the publication of relevant, accurate, understandable, comparable and accessible information for consumers.
- Any methodologies used in data calculations for aviation consumer environmental information should be transparent and available to consumers.
- Some questions on whether we intend for these principles to apply to all commercial airlines flying in the UK or only to UK registered ones.
- There were some concerns about ensuring a level playing field and appropriate transition timescales for any new requirements to be implemented; and
- Recommendations from some respondents that more research was required on how to present the information to consumers.

9. In July 2024 we published a further consultation on this subject: Consumer Environmental Information: Consultation on draft principles for aviation consumer environmental information

Chapter 1

Background and next steps

Call for evidence 2023

1.1 We published a Call for Evidence in January 2023 to seek a range of views to inform our policy design and implementation on aviation consumer environmental information from (amongst others) the aviation industry, consumer groups, academics, environmental groups, the public, and holders and users of aviation environmental information. We committed to consulting on the policy design and implementation of our proposals for sharing environmental information with consumers in our Environmental Sustainability Strategy.[2]

1.2 Our overall objective is to ensure that people can find information:

- that is reliable,
- at the point of looking for and booking flights,
- which uses a standard approach and data,
- in a format that is understandable, contextualised and accessible,

which will give them the confidence to make decisions on whether and how they travel.

1.3 The Call for Evidence closed in April 2023.

1.4 We received responses from 44 organisations and 78 individuals. We also met with over 20 organisations during and around the period that the Call for Evidence was open.

1.5 This document sets out a summary of those responses. The responses informed the next stage of this project, the outputs of which are:

- the development of draft principles, the purpose of which is to provide guidance on best practice in the provision of aviation consumer environmental information; and
- options to take forward those principles.

1.6 In July 2024 we published a further consultation: Consultation on draft principles for aviation consumer environmental information

[2] CAA's environmental sustainability strategy, May 2022 www.caa.co.uk/media/egul5yds/2360-caa_env-sus-stategy_v6-2- front.pdf

Next steps

1.7 We will consider responses to the further round of consultation and are currently aiming to publish final principles, accompanying guidance and a consultation response in 2025.

Call for evidence questions

1.8 We asked a range of questions in the Call for Evidence which are set out below.

Consumer environmental information

1. What are your views on existing examples of aviation consumer environmental information (for example those listed in Appendix A)?[3]
2. Please list/identify examples of existing schemes for the provision of aviation consumer environmental information beyond those listed in Appendix A.

Presentation of information to consumers

3. What are the key requirements for the presentation of:
   a) accurate,
   b) understandable,
   c) standardised,
   d) comparable
   e) accessible and
   f) useful consumer environmental information?

4. What consumer environmental information should be presented to consumers?

5. When should consumer environmental information be presented to consumers? (For example, on the results page when searching for a flight, on a boarding pass or after a flight)

6. How should consumer environmental information be presented? For example, is kg CO_2 per journey appropriate and / or should consumer environmental information be presented as a comparison with other transport modes or other equivalent activities?

7. Please list/identify examples of consumer environmental information in other sectors which enable complex information to be provided in an accurate, understandable, standardised, comparable, accessible and useful way.

[3] Appendix A of https://consultations.caa.co.uk/policy-development/environmental-information-call-for-evidence/user_uploads/caa_consumer_environmental_information_call_for_evidence_jan_2023.pdf

Consumer protection

8. How should we (the Civil Aviation Authority ("CAA") use our existing powers to protect consumers from misleading environmental information?[4]
9. Please list/identify examples of regulatory regimes in other sectors that work well to protect consumers from misleading environmental information.
10. How should the provision of consumer environmental information be monitored?

Potential and existing methodologies for the provision of consumer environmental information

11. If you have an existing relevant methodology for calculating emissions from a journey:

    a. please describe it and the reasoning behind it, including details of the types of information you include in the methodology and the assumptions you make.

    b. If your organisation has made a conscious choice not to include certain types of potentially relevant information in your methodology yet, please set out the reasons why.

    c. If potentially relevant information may be included in your methodology in the future, please describe the information and any necessary background to its potential inclusion.

12. If you haven't developed a methodology, what would you expect to see in a methodology (for example different aircraft types, fuels, average load factors, the airline's overall fleet, and routes including generalised indicators relating to destination / origin airports)?

13. How should we (the CAA) take non-CO_2 emissions and their effects into account?

Data

14. Which existing standardised datasets do you think could be repurposed (with the necessary safeguards) to provide environmental consumer information? For example, the International Civil Aviation Organization (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) CO_2 Estimation and Reporting Tool.

[4] For an overview of our consumer protection powers and our role and duties in relation to the environment please see www.caa.co.uk/our-work/about-us/enforcement-of-consumer-law/ and www.caa.co.uk/Consumers/Environment/Environment/

15. Should there be a mandatory requirement for airlines to provide relevant environmental data to the CAA and if so, how should this be aligned with existing requirements?

Relevant research

16. The CAA published research on what consumers want from consumer environmental information in 2021.[5] Have you undertaken similar or related relevant research which you can share with us?

Potential pitfalls and any other additional information

17. What do you think are the potential pitfalls relating to the provision of consumer environmental information?

18. What strategies should we consider to mitigate potential negative consequences?

19. Is there anything else that you think we should be aware of in relation to the provision of consumer environmental information, beyond the areas mentioned above?

[5] Britain Thinks – CAA Environmental Information Provision, April 2021 publicapps.caa.co.uk/docs/33/CAP2205%20-%20CAA_Environmental%20Information%20Provision_Final%20Report_070421.pdf

Chapter 2

Summary of responses – consumer environmental information (questions 1 & 2)

Consumer environmental information

Overview

2.1 There were many interesting and diverse views on the different methodologies we had highlighted in our Call for Evidence, as well as on other methodologies, which have provided a better understanding of the benefits and weaknesses of each. The responses ranged from no familiarity with existing examples to high familiarity with existing examples.

2.2 There were some positive views expressed about existing examples, with the value of consumer information in helping the aviation sector to decarbonise and enabling informed consumer choice being highlighted. In contrast to the positive views, other respondents considered that existing examples could be improved by better access to accurate data. Also, some existing examples were mentioned as not enabling informed consumer choice or enough information about the environmental impact of flying. Other respondents wanted increased access to, or use of more accurate data based on actual flight data. There were also requests for greater alignment, comparability and consistency in methodologies and more contextualisation and meaning given by improvements to presentation.

2.3 The responses also covered issues including whether non-CO_2 effects should be included in the information provided, as well as CO_2, with calls for more research into this important area and more clarity for passengers on what it means. Other responses called for methodologies that allowed for comparisons between different modes of transport, to allow fully informed travel choices.

2.4 These wide-ranging views substantiate the need to standardise how this information is calculated and provided to passengers, but also highlights the complexity of doing so.

Question 1: What are your views on existing examples of aviation consumer environmental information (for example those listed in Appendix A)?

Methodologies and frameworks

2.5 Some respondents highlighted the International Civil Aviation Organization ("ICAO") emissions calculation as easy for consumers to use and noted that it is

internationally approved. But, it was mentioned that ICAO use a different emissions factor to that used by UK airlines under reporting and emissions trading obligations.

2.6 There was support for the International Air Transport Association's ("IATA") single methodology for calculating aviation CO_2 emissions with some suggestions that it should also include Sustainable Aviation Fuel ("SAF") and non-CO_2 emissions, although some respondents mentioned that IATA's methodology is not publicly accessible and therefore not accessible enough to be useful consumer environmental information.

2.7 IBA's methodology was mentioned as an example of how aviation data is processed for commercial purposes but it would not be accessible enough to be used for calculating publicly available consumer environmental information, as that is not its current purpose.[6]

2.8 Some respondents suggested that Travalyst's aviation emissions framework is a great example of aviation consumer environmental information, as it incorporates several factors including the great circle distance[7] and aircraft type. As the framework is used on several large booking platforms, respondents suggested that it enables more meaningful comparisons for consumers than has been possible before.

2.9 In addition, there was support for the role and work of Travalyst in working towards alignment across the existing methodologies and helping consumers to trust the information presented. In fact, some respondents suggested that the CAA should recommend an existing, industry-led initiative such as the Travalyst aviation emissions framework. Concerns were raised regarding some of Travalyst's partners and the way in which some of them present emissions data giving the impression that aviation currently is "green".

2.10 There were concerns about potential errors in the 'Landing, Take-off' element of methodologies. Other concerns were on the potential underestimation of the impact of connecting flights, with some respondents suggesting that some connecting flights were being shown as more efficient than direct flights. Some respondents had concerns that the use of estimated data led to inaccuracies, particularly on load factors.

2.11 Some respondents showed support for the Aviation Environment Federation's ("AEF") illustrative calculations considering that they are user-friendly and useful,

[6] https://www.iba.aero/

[7] https://en.wikipedia.org/wiki/Great-circle_distance

including a factor for radiative forcing index (RFI)[8] and comparison with other transport modes.

2.12 Respondents who commented on it were generally supportive of the European Union Aviation Safety Agency ("EASA") environmental label[9] with some suggesting that adopting it or aligning with it would be a sensible approach to provide consumers with environmental information consistent across all airlines and flight types. Some respondents highlighted that it was still under development and others suggested that it provided a fair and consistent methodology across transport modes but that it should use data from mandatory reporting. Other respondents mentioned that EASA's scheme is voluntary and that this may weaken any positive impact.

2.13 There was positive feedback provided on the Aviation Impact Accelerator's tools[10] as a good example of comparisons based on full environmental impact. But some respondents said that, although this is a useful tool for understanding the climate impact of different fuels and technologies in aviation, it is not useful for the average person as it does not enable comparison between existing forms of flight, as most of the fuels and technologies are currently unavailable for passengers to use.

2.14 Respondents mentioned Lite Flights and Cirium as good examples, but it was highlighted that Lite Flights do not cover business and first class.

2.15 Some respondents suggested that airlines should use their own data for calculating emissions as they have access to the most accurate information.

2.16 There was some criticism of methodologies that used the great circle distance to calculate flight length, with some support for the addition of 95km as seen in the UK Emissions Trading Scheme ("UK ETS") tonne kilometre methodology to represent real world activity more accurately. Some respondents suggested that allowing additional time for journeys to and from congested airports to reflect greater taxi and holding times would produce more accurate estimates, while mentioning that the fuel burnt during taxiing is small compared to that used during flight.

2.17 There was support for common frameworks and granular grading (as seen in the energy efficiency labels on domestic appliances) for emissions reporting.

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[8] See page 47 for a definition of radiative forcing. https://www.easa.europa.eu/eco/sites/default/files/2023-02/230217_EASA%20EAER%202022.pdf

[9] https://www.easa.europa.eu/eco/aviation-environmental-label/topics/the-case-for-an-environmental-label-in-aviation

[10] Aviation Impact Accelerator – RECCE tool https://recce.aiatools.org/

2.18 Standardisation, transparency, and alignment with international standards were considered to be important by respondents who mentioned it for emissions reporting.

2.19 There was support for mandatory disclosure of emissions information and independent audits were recommended by some respondents.

2.20 Submissions from the aviation industry gave examples of their own use of environmental information, including airlines publishing emissions information in annual reports. Other respondents mentioned that consumers are unlikely to study a report or an airline's website before booking a flight therefore consumers must be provided with information at the earliest point to influence behaviour (for example, before they have decided to purchase a particular flight).

Inadequate and Confusing Information

2.21 Some existing examples of environmental information were considered by some respondents to be inadequate, as they do not allow for comparison between different forms of transport, and the variation in methodologies and the way the information is presented can be confusing for consumers.

2.22 Some respondents suggested that the information currently available is not helpful for modal comparison for domestic travel. In addition, some respondents provided examples of marginally increased emissions per passenger when added to the flight schedule.[11]

2.23 Some respondents considered that providing data on emissions was meaningless without contextual examples. They suggested examples such as comparisons with other modes (particularly rail), everyday activities such as showering and an average person's annual climate impact.

2.24 Others highlighted the importance of domestic air routes and suggested that any unfair comparisons between domestic air routes and rail might have an existential impact on airports and airlines mainly serving the domestic aviation market.

2.25 They mentioned that these airports and airlines provide connectivity (including from remote areas) as well as provide services including lifeline and blue light flights, military, general aviation, offshore, pilot training and aircraft storage and recycling. It was noted that UK domestic aviation emissions were 3.9% of the total of UK aviation emissions in 2018[12] and have only grown 0.3% between

[11] Marginal versus Fully allocated emission costing for transport https://www.linkedin.com/pulse/marginal-versus-fully-allocated-emission-costing-transport-andy-smith/?trackingId=ergyvWIRttcGkrZjrs5ljw%3D%3D

[12] Respondent quoted: Department for Transport Aviation Decarbonisation Briefing - March 2021

1990 and 2018 compared to UK aviation emissions growth of 18% since 2000.[13] Some respondents suggested that domestic aviation is likely to be the first to benefit from technological improvements such as SAF and electrification/hybrid due to the size of aircraft that typically fly these routes. An example was given of business aviation being able to afford more expensive types of fuel.

2.26 Some respondents mentioned that different booking methods and emissions calculators can display different information for the same flight.

2.27 Some respondents considered that existing examples are too complex for the average consumer to understand and do not enable informed comparisons as the impacts are measured and presented in varying ways, reducing reliability. Some respondents suggested that consumers may be confused by the term "% less than average" and what it meant in terms of providing context on emissions to consumers looking for flights but other respondents considered that providing the amount of kg CO_2 (whether more or less) compared to the average on a route would be an effective proxy for consumers.

Total climate impact and non-CO_2

2.28 There were a variety of views on whether the total climate impact should be included in the information provided to passengers. Some respondents said that consumers should be provided with a single figure for the total climate impact of any proposed flight, including non-CO_2 impacts. Some respondents said that consumers needed more education on non-CO_2 emissions, including contrails and innovative aviation technologies, and they considered that the CAA should consider further additional consumer research to build knowledge on consumer perception and understanding of non-CO_2 impacts (for example, water vapour, soot, sulphur dioxide, and nitrogen oxide).

2.29 Other respondents were clear that any environmental claims covering non-CO_2 must be transparent and avoid potentially misleading language around their accuracy. Some respondents suggested that if non-CO_2 information was provided it should be displayed separately. Others considered that there should be more information available about emissions trading schemes and offsetting with some respondents viewing these positively and some viewing them negatively.

2.30 Respondents highlighted some of the complexities of calculating and conveying aviation's non-CO_2 impacts. Respondents noted for example that non-CO_2 effects contribute to aviation's climate impact through their impacts on atmospheric composition. Some respondents mentioned that these uncertainties can lead to complexities in both calculating the impact and conveying that impact

[13] BEIS (2020) Final UK greenhouse gas emissions national statistics 2018; BEIS (2020) Provisional UK greenhouse gas emissions national statistics 2019; BEIS (2020) Energy Trends; CCC estimates for 2019

to consumers, but there was a difference of opinion on whether the uncertainties mean that non-CO_2 should or should not be accounted for in any emissions estimates. Some respondents noted that using an aggregate multiplier is one way of taking account of the full climate impact of aviation, with Department for Business, Energy & Industrial Strategy ("BEIS")[14] and Toitū of New Zealand[15] given as examples. Other respondents mentioned that when non-CO_2 emissions have been removed from climate impact models this has reduced the kg CO_2e figures presented to consumers by approximately 38% so including them would give a more accurate picture of aviation's emissions.[16]

Corporate travel and flight advertising

2.31 Some respondents were keen that we thought more broadly than just flight booking and thought environmental information should be included in business travel policies or made available on corporate travel booking systems.

2.32 Other respondents were strongly supportive of emissions information being clearly stated in adverts for flights, other promotional material like travel agents' shop windows and in travel journalism to encourage informed travel choices and ensure that consumers are informed about the environmental consequences of their decisions to fly. Some warned that, where adverts refer to products' environmental credentials or make claims about their impact on the climate, those claims need to be accurate and not misleading about the product otherwise they may breach the Advertising Codes.[17] In addition, any claims made in adverts need to be substantiated and supported by evidence relating specifically to the products being advertised if they are to be regarded as objective. There is particular guidance available for environmental claims made in adverts[18] and a number of rulings made on adverts in the environmental sector.[19]

2.33 Several respondents commented that the use of graphics as well as simple and consistent presentation can help consumers understand the environmental

[14] Now Department for Business and Trade (DBT), the Department for Energy Security and Net Zero (DESNZ) and the Department for Science, Innovation and Technology (DSIT)

[15] https://www.toitu.co.nz/news-and-events/news/measure/what-is-radiative-forcing-index

[16] BBC, Google 'airbrushes' out emissions from flying, BBC reveals, 2022, https://www.bbc.co.uk/news/science-environment-62664981

[17] https://www.asa.org.uk/codes-and-rulings/advertising-codes.html

[18] Section 11 of the CAP Code and Section 9 of the BCAP Code https://www.asa.org.uk/codes-and-rulings/advertising-codes.html

[19] https://www.asa.org.uk/rulings/deutsche-lufthansa-ag-a22-1169419-deutsche-lufthansa-ag.html, https://www.asa.org.uk/rulings/etihad-airways-a22-1174208-etihad-airways.html and https://www.asa.org.uk/rulings/ryanair-ltd-cas-571089-p1w6b2.html

impact of aviation, for example, allowing a better understanding of the impacts that aviation has on climate change because of CO_2 and non-CO_2 emissions.

2.34 A wide range of respondents were in favour of simple environmental information. Respondents mentioned that consumers have limited time when purchasing flights so simplicity will enable better accessibility and understanding for the public (including those who have additional accessibility and literacy requirements).

2.35 Respondents suggested that environmental information should be available before booking flights at an early point in the booking process, close to the price, pre-contract to enable the comparison of aviation to other modes of transport. Rail was a mode of alternative transport that was mentioned often by respondents as a mode that should be used as a contextual comparator with aviation, although some respondents stated that the majority of UK domestic air services cross water and do not have a viable rail alternative.[20] Some respondents raised concerns about regional connectivity and modal shift.

Data and Accuracy

2.36 There was a lot of support for using actual historical data to improve any estimates given to consumers when looking for and booking flights and many respondents considered that airlines held the most accurate data for emissions reporting, although some suggested that agreement at a senior level within airlines could be necessary for publishing CO_2 emissions data.

2.37 Consistency of data used and transparency on where the data comes from were important to many respondents. Some respondents raised concerns regarding consistent emissions calculations and variations between using actual load factor or actual fuel burn data.

2.38 There were suggestions made by some respondents that airlines already share data for UK ETS and ICAO Carbon Offsetting and Reduction Scheme for International Aviation ("CORSIA") so providing this data for another purpose may not be an additional cost burden. It was suggested that all airlines should use a common framework for their emissions reporting.

2.39 It was felt by some respondents that, as airlines hold the most accurate data about their own actual fuel consumption and load factors, it is important that environmental information should be airline specific. They argued that this would allow for more accurate comparability due to the differences in business models, aircraft types, load factors and seating configurations between airlines. Examples

[20] https://www.linkedin.com/pulse/we-need-more-sophisticated-discussion-transport-emissions-andy-smith/?trackingId=2fVjhPHqGtgXyKkT4pnhGw%3D%3D

were given of the variation in emissions between different airlines for the same routes.[21]

Environmental Impact and Considerations

2.40 There was a difference of opinion from respondents on whether and, if so, how the use of SAF should be considered in any methodology. Some respondents considered it was important to include the overall lifecycle reduction in emissions via SAF, carbon offsetting and emissions trading schemes (including CORSIA, EU Emissions Trading Scheme ("EU ETS") and UK ETS). Others considered that it was important to be clear with consumers about tailpipe emissions, stating that carbon trading and offsetting do not stop the release of emissions and including them in any calculations would be greenwashing. Some respondents highlighted that SAF has a range of feedstocks and production methods, which may produce differing levels of CO_2 emissions, and it may be difficult to reflect this accurately in any methodology.

2.41 Respondents had a range of views on the value and reliability of carbon offsetting and the inclusion of a RFI factor for non-CO_2 emissions. Some respondents were keen that all aviation emissions are captured by any methodology, but some highlighted the remaining scientific uncertainty around the warming / cooling effect of non-CO_2 emissions which can be influenced by a range of factors including the time of day and weather. Some respondents provided links to research undertaken for the German Environment Agency which set out the challenges of using a single metric for non-CO_2 effects, stating that for distances less than 500km the indirect factor can be less than one.[22] Alongside this, research on the atmospheric and climate impacts of transport published in the journal, Atmospheric Environment, mentioned that applying RFI to a single sector could result in appropriate measures being taken.[23] Other respondents suggested using a range of RFI factors between one and 2.5 depending on flight length (including the BEIS [now DESNZ] multiplier).[24]

2.42 There were several comments on the impact on public health of noise emissions from aviation (in answer to this and other questions) and recommendations that information about noise should also be considered for inclusion. There was also a recommendation that the CAA should undertake a call for evidence on the

[21] https://www.which.co.uk/news/article/british-airways-emitting-more-carbon-than-rival-airlines-a29Te8t2Gsx0

[22] https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2020-07-28_climatechange_20-2020_integrationofnonco2effects_finalreport_.pdf p44

[23] https://core.ac.uk/download/pdf/30994179.pdf

[24] As of March 2024 this is 1.7 https://assets.publishing.service.gov.uk/media/647f50dd103ca60013039a8a/2023-ghg-cf-methodology-paper.pdf

subject of consumer environmental information on noise and update its website as some of the existing published information is out of date.

Transparency, standardisation, and international harmonisation

2.43 Methodologies that are clear, transparent[25] and align with existing international standards were considered by respondents to be crucial. Respondents highlighted the importance of the CAA, industry and others taking a harmonised approach towards environmental information standards and methodologies.

2.44 Some respondents recommended that the CAA should adopt IATA's recommended practices for measuring passenger CO_2 emissions (RP1726) and for calculating cargo CO_2 emissions (RP1678) and that we should coordinate/align with EASA's Ecolabel project.[26]

2.45 Some respondents suggested that any methodologies should be published and available for scrutiny with clear calculation logic, data inputs and sources, and governance processes and that methodology strengths and weaknesses should be acknowledged and communicated transparently.

2.46 Some respondents considered that although simplicity of presentation was important, there should be more information available to those who need it, including explanations on what CO_2 and non-CO_2 mean in ways that make sense to the average person. Some respondents highlighted that kg CO_2 is often difficult to interpret for the public with one study suggesting that "when presented with quantitative carbon dioxide information they [the public] are unable to make a connection between carbon and their personal actions".[27] Some respondents suggested this information could be provided or hosted by the CAA. Support was given from some respondents to IATA's proposal for detailed frequently asked questions ("FAQs") to support the information presented to consumers.

2.47 Regarding the use of estimated load factors within emissions methodologies, an example was given of someone flying in a two class modern aircraft compared to someone flying in an older single class aircraft. The same load factor was applied in both calculations which showed the person flying in the modern aircraft as having a lower carbon footprint, when in reality, if the more modern aircraft had a lower-than-average load factor and the older aircraft had a higher-than-average load factor, the consumer's carbon footprint would be the same or less when flying in the older aircraft. Other respondents mentioned that aircraft

[25] Including transparency on data sources.

[26] https://www.easa.europa.eu/eco/aviation-environmental-label/topics/the-case-for-an-environmental-label-in-aviation

[27] https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A459774&dswid=9126

get heavier as they age due to in-service modifications, dust and retained moisture which would have an impact on the amount of fuel burned.

Other considerations

2.48 Some respondents wanted more information to be available on rail and coach options.

2.49 Some respondents raised concerns that the aviation industry is overly optimistic about new technologies, and examples were given where respondents had seen airlines talk about efficiency savings in their operations without mentioning whether this increased the number of scheduled flights and thus cancelled out any efficiency savings.

Question 2: Please list/identify examples of existing schemes for the provision of aviation consumer environmental information beyond those listed in Appendix A

2.50 Respondents provided a wide range of examples of both CO2 emissions calculations methodologies and tools (listed below at paragraph 2.51) to highlight additional sources of aviation consumer environmental information. For example:

i) The *Airport Tracker* website provides information on emissions from flights departing global airports, including total emissions and emissions per passenger kilometre. They compare airport emissions to those of coal-fired power plants.

ii) The *CORSIA framework*, which is an ICAO market-based measure address aviation emissions (not designed to calculate emissions per passenger).

iii) Data on aircraft noise can be found on *WebTrak* for Heathrow, Gatwick, and Stansted airports.

iv) *Travel and Climate* allows consumers to compare various modes of transportation, not just aviation, regarding their carbon footprint. By inputting their starting point and destination, consumers can compare different modes of transportation, such as flying, driving, taking the train, or even cycling, in terms of their emissions and travel time.

v) *Sustainable Travel International – Carbon Footprint is* a tool that calculates the carbon footprint of private charters. The tool calculates the trip's emissions by entering information such as the number of passengers and the trip's distance.

2.51 List of examples (with links) mentioned by respondents:

i. Airport Tracker

ii. Atmosfair

iii. Aviation Impact Accelerator – RECCE tool

iv. Carbon Footprint's Flight carbon footprint
v. Committee on Climate Change
vi. CORSIA framework
vii. DEFRA route methodology
viii. EMEP/EEA air pollutant emission inventory guidebook 2019
ix. EU ETS
x. EUROCONTROL's Small Emitters Tool
xi. Flightemissionmap.org
xii. Google Flights (see also Google TIM)
xiii. Grantham Research Institute on Climate Change and the Environment
xiv. IATA CO_2 Connect
xv. International Energy Agency ("IEA") Aviation Report
xvi. The Intergovernmental Panel on Climate Change ("IPCC") Aircraft Emissions
xvii. Manchester Airport's flight offsetting program by CarbonClick
xviii. myclimate.org
xix. OAG
xx. Offset Alliance
xxi. Piano X
xxii. RDC Aviation
xxiii. Science Based Targets Initiative (SBTi)
xxiv. Sustainable Travel International – Carbon Footprint
xxv. Skyscanner
xxvi. Travalyst coalition (see also Google TIM)
xxvii. Travel and Climate
xxviii. Tyndall Centre
xxix. UK ETS
xxx. UK Government Emissions Conversions Factors
xxxi. WebTrak

Chapter 3

Summary of responses – presentation of information to consumers (questions 3-7)

Presentation of information to consumers

3.1 The Call for Evidence asked several questions about how and when information should be presented to consumers, and what that information should include, to ensure that it is accurate, understandable, standardised, comparable, accessible and useful.

3.2 Overall, there was strong support for a standardised way of presenting information, to ensure that it is trusted by consumers and more likely to enable them to make informed choices in their travel arrangements. Views ranged from encouraging the CAA to develop a methodology itself to those who urged the CAA to align with an existing methodology and to align with international standards and approaches, to ensure a consistency through the global market.

3.3 There was support for providing comparisons with other modes of transport, but this must be meaningful and fair, using consistent metrics and presentation. Some journeys are complex with many different legs, and it may be difficult to calculate the environmental impact of these accurately.

3.4 There were various views on what information should be provided, for example, whether it should be based solely on CO_2 or should include non-CO_2 impacts by reporting on CO_2 equivalents (CO_2e), and whether the information should show the distinction between upstream emissions (well to tank) and the tailpipe emissions (tank to wake). Clarity on these and other terms will be essential for ensuring passengers understand the information, as well as for ensuring consistency.

3.5 Others suggested that information should also be provided on air quality and noise, along with information on the effects these have on human health and biodiversity. There were also views on providing information on offsetting.

3.6 Several respondents suggested that reporting CO_2 per km or per journey was simplest and easiest to compare to other modes. But many respondents cautioned that this may not be that understandable for passengers so contextual information and equivalents such as household usage could also be provided.

3.7 There was strong support for presenting this information as part of the pre-contract booking process, to enable a fully informed choice, but there were also suggestions for providing information on boarding passes, in confirmation emails

and inflight magazines, as well as providing post flight information on the flight's actual performance.

3.8 There was also a range of views on whether there should be regulatory requirements. There were calls for independent oversight but others noted that it would be difficult to require indirect sellers such as travel agents and tour operators to provide the relevant information as they rely on the airlines to provide it to them. Some respondents also noted that airlines already have to report on emissions through several existing frameworks.

Question 3a: What are the key requirements for the presentation of accurate consumer environmental information?

Accuracy and Reliability

3.9 Some respondents considered that achieving high accuracy requires validation of data (including against real-world fuel burn data) and calibration. It was also suggested that data should be recent (within three-five years), relevant to the airline's current operations, reliable, regularly and often reported, consistent, granular, and standardised. Some examples were provided of potential validation data including that reported to the Agência Nacional de Aviação Civil ("ANAC") in Brazil, which was mentioned as being the most granular data publicly available, as well as data provided on the United States Department of Transportation ("US DOT") Form 41.

3.10 Some respondents considered that the use of (and greater access to) actual airline data that is independently verified will lead to more accurate results. In addition, some stressed that the accuracy of fuel consumption and emissions estimates should be clearly defined and substantiated.

3.11 Some respondents suggested that there was a role for an optional trusted certification scheme to provide consumers with confidence that environmental information has been calculated and is presented in accordance with requirements established by the CAA and / or the Department for Transport ("DfT"). Respondents mentioned that this scheme could be similar to the government's Carbon Offsetting Quality Assurance scheme.

Consumer Education and Trust

3.12 Respondents considered that consumer education on offsetting and environmental impact is needed.[28]

[28] https://www.which.co.uk/reviews/airlines/article/carbon-offsetting-how-to-reduce-the-impact-of-flying-abuH44x4FeWn

3.13 Many respondents stated that the information should be accessible to all, with suggestions that the information should be clear, usable, simple, engaging and inclusive.

3.14 Respondents stressed that consumer trust in the environmental information is key. Consumers need to trust that the information is as accurate as it can be at the time of departure. They were also clear that information should be reliable and honest if consumers are to rely on it and use it to inform their travel choices. One response suggested that a visual shorthand could be provided to convey that information "conforms to the CAA guidance for the presentation of environmental information".

3.15 There was also a call for providing greater transparency on when information is based on estimates (rather than actual data) to avoid greenwashing.

Methodology and Standards

3.16 There was fairly strong support from respondents on the importance of a standardised methodology to be used across airlines and other stakeholders, but some respondents expressed a view that it would be better for the CAA to seek to align with existing methodologies rather than develop its own.

3.17 Some respondents considered that including guidance on the application of passenger weight, non-CO_2 emissions, and radiative forcing would be essential and there were some views expressed that consistency in CO_2 scope and emissions accounting is important.

Transparency and Disclosure

3.18 There was support for further transparency and disclosure by airlines and airports on their efforts to reduce emissions.

3.19 Respondents to this and other questions suggested that environmental information should be traceable, agnostic to business considerations such as preferred carriers, and visible.

3.20 Respondents suggested that transparent disclosure of data by airlines was important both for accuracy of that data and to enable informed choices and comparisons between both airlines and flight options as well as other modes.

Comparability and Context

3.21 Respondents considered that comparisons should be fair, meaningful, and include everyday activities for example heating a house or taking a shower.[29]

[29] Some examples provided by respondents: https://honestmobile.co.uk/2021/08/05/carbonfootprint/

3.22 A large proportion of respondents suggested that information should include comparisons with other modes of transportation (particularly rail, and where other modes were a realistic alternative).

3.23 It was mentioned that the scale of environmental impact and comparisons with personal carbon budgets should be clear.

Noise and Other Impacts

3.24 Some respondents to this and other questions mentioned the importance of providing information on the impacts of aviation noise including its impacts on health. Other respondents considered that non-CO_2 impacts of aviation should be included.

3.25 Some respondents expressed a view that the CAA should broaden environmental information to also include information on air quality, acid rain, and biodiversity.

Regulatory Considerations

3.26 There were a range of views given on whether airlines should be mandated to provide emissions data.

3.27 Some respondents considered that regulators like the CAA should develop their own methodologies and ensure the implementation of those methodologies.

3.28 Some respondents commented more broadly on tax and regulatory policies, including recommending that aviation fuel taxation is increased, and that the CAA should develop a strategic, long term regulatory landscape to support investment and growth in aviation to support the delivery of net zero. Other responses suggested that DfT should consider whether net zero should be part of the CAA's statutory duties in the future.

Behavioural Economics and Nudging

3.29 Some respondents were clear that behavioural economics principles[30] can enhance consumer understanding of complex information including on domestic appliances and cars.

3.30 Some respondents considered that providing the right information at the right time and nudging consumers to consider making informed travel choices can help promote more sustainable travel.

Offset and Carbon Credit Schemes

3.31 There were a range of views on the effectiveness, reliability and value of carbon offsetting and credit schemes. Some respondents highlighted existing schemes

[30] As set out in Thaler and Sunstein's book Nudge https://en.wikipedia.org/wiki/Nudge_(book)

in aviation and considered that flights subject to these schemes should be able to include the offset or credit data in their information when published, whether it is included in the total emission data published or as a separate piece of information. Some respondents considered that any tailpipe emissions should be part of the calculation as offsetting and SAF do not reduce tailpipe emissions.

3.32 There were strong views on offsetting with a clear steer from respondents that avoiding misleading claims involving offsets is crucial.

Question 3b: What are the key requirements for the presentation of understandable consumer environmental information?

Clear and Understandable Information

3.33 Respondents considered that information should be concise, free of jargon, and easily and quickly understandable.

3.34 Familiar symbols, semiotic clues, and graphics were suggested as ways to enhance understanding.

3.35 Clear ratings, such as those used in energy efficiency labels on domestic appliances or Energy Performance Certificates ("EPCs"), should be provided to enable quick decision making. Some respondents felt that star ratings (for example 1-5 stars might be misleading as shorter flights have higher per passenger emissions than longer flights do but have less overall emissions.

3.36 Contextualisation, analogies, and comparisons with everyday life were suggested as ways to help comprehension.

Accuracy and Scope

3.37 Respondents considered it was important that accurate and independent data should be provided.

3.38 Some respondents considered that the scope of emissions measurements should be clearly explained (i.e. tank-to-wake tailpipe vs. well-to-tank upstream, CO_2 vs. CO_2e, inclusion of non-CO_2).

3.39 There was a range of views on whether both CO_2 and non-CO_2 emissions should be considered for inclusion.

3.40 Those respondents who mentioned it suggested that any emissions data should align with EU directives (and other international standards).

Comparative and Contextual Information

3.41 Comparisons to benchmarks (i.e. how does a particular flight compare to the industry average) and alternative modes of transport (particularly rail for short haul and domestic) were considered to be valuable by some respondents.

3.42 Some respondents suggested that information should enable comparisons between airlines and different seat classes. Some respondents mentioned that the type of aircraft, seating configuration of the aircraft and class of travel flown is highly relevant information, although complex and requiring accurate historical data to enable realistic estimates. Some journeys involve multiple sectors on different aircraft types, for example to fly from Edinburgh to Sydney. On many routes, there will be non-stop and transit options available.

Transparency and Disclosure

3.43 Respondents considered that methodologies and authoritative sources of data and other useful information should be referenced.

3.44 Respondents suggested that links to more information (including on the need to cut aviation emissions) and data sources should be provided to enable those who needed more information to easily obtain it.

3.45 Respondents suggested that emissions calculations should be transparent so that consumers and other interested parties can work out where the information they are seeing has come from if they want to know more.

Accessibility

3.46 There was broad support from respondents that information should be accessible to all including those using screen readers and some respondents mentioned that information should cater to varying levels of information literacy.

3.47 Some respondents mentioned that diversity, equity, and inclusion (“DEI”) considerations should be addressed.

Health and Environmental Impacts

3.48 As in responses to other questions, some respondents considered that the CAA should expand the criteria to include air pollution, noise and air quality impact in consumer environmental information.

3.49 Some respondents thought that airport emissions and local air quality could be improved by providing more information to consumers.

3.50 Some respondents suggested that the cumulative annual contribution and the warming effect of contrails should be considered but some respondents stated that more scientific understanding of the impact of contrails and other non-CO_2

effects of aviation was needed before it could be fully taken into account in any methodology.

Standardisation across modes

3.51 More broadly than just aviation, some respondents were keen that there should be standardisation of methodologies/presentation of information across modes of transport with common principles that could be applied across competing modes of transport (including ferry, road and rail travel).

Offsetting and Sustainable Aviation Fuel

3.52 Respondents had a range of views on the advantages and disadvantages of including offsetting and SAF in methodologies or environmental information provided to consumers.

Question 3c: What are the key requirements for the presentation of standardised consumer environmental information?

Reporting Frameworks and Methodologies

3.53 Some respondents mentioned that airlines in the UK report under the Streamlined Energy and Carbon Reporting Regulation ("SECR") framework, CORSIA, and UK ETS and EU ETS.

3.54 There were views given that the CAA should publish a methodology that is clear, transparent, and consistent and some respondents considered that any methodology should be published by an independent third party and available for scrutiny.

3.55 Some respondents considered that any methodology should consider cap-and-trade schemes and be consistent for modelling pre and post-flight data. Some respondents preferred emissions to be reported post-flight as more accurate information for the consumer (while agreeing that pre-flight aggregated data would enable pre-flight estimates to be provided to consumers).

Standardisation and Transparency

3.56 Some respondents considered that data presentation, methodology, and emissions reporting should be standardised across aviation and that transparent and standardised information builds consumer trust.

3.57 Some respondents suggested that data should be independent of airlines and Original Equipment Manufacturers ("OEMs") and that information should be presented in a clear, simple, and engaging manner.

Comparability and Context

3.58 Comparisons with other modes of transport, particularly rail, were considered to be important by some respondents and contextualisation should be used to avoid confusion (for example how much CO_2 would be emitted for a similar journey by rail or car where appropriate or how would the flight compare to an average household's recommended carbon footprint).

3.59 Information should enable informed choices and there was strong support for providing more information to consumers on the true journey time (including time taken to check in and go through airport security and collect baggage on arrival) to enable more informed choices between different modes of transport with support provided by some respondents on also providing journey time alongside information on emissions and price for other modes to enable balanced decisions based on journey duration, cost and emissions.

Consumer Confidence and Trust

3.60 Respondents expressed the view that having a standardised methodology and standard form and style of presentation will increase consumer confidence.

3.61 Some respondents suggested that consumer trust is key to the success of this work, and to build that trust data should be transparent and accessible.

Need for Further Consultation

3.62 Some respondents were keen that public consultation should continue on this subject and that government and CAA engagement with airlines and global organisations is important.

Development of environmental information

3.63 Similar to responses to other questions, there were a range of views on whether any methodology should account for non-CO_2 impacts.

3.64 Some respondents highlighted that engagement with organisations like the Environment Agency, World Health Organization, and IPCC can help develop environmental indices.

3.65 There were strong views expressed that increased open access to reliable datasets is crucial for more accurate and comparable consumer environmental information.

Regulation and Enforcement

3.66 There were different opinions presented on whether publication of consumer environmental information should be mandatory for airlines (and other companies who sell flights). Some respondents considered that it should be mandatory, but that the timelines for implementation by industry should be fair

and reasonable to enable sufficient time to plan, finance and implement any requirements.

3.67 Oversight by an independent standards body with enforcement powers was recommended and there were some respondents who gave their view that this should be the CAA.

Greenwashing

3.68 Some respondents considered that rules for marketing "Green Fares" should be provided, and others expressed the view that aviation is not “green” so to use the word or colour green, symbols like green leaves, the words “low-emission” or “climate-friendly” or similar would be misleading or examples of greenwashing.

International Alignment

3.69 There was further support given in the responses to this question that alignment with global standards and approaches is important and that the UK government should engage with international organisations when making decisions on policies like consumer environmental information as aviation consumers shouldn’t see a wide range of different information and different styles of presentation depending on where they are looking for and buying flights.

3.70 Some responses expressed caution regarding rushing to standardise and suggested the importance of taking the time needed to get to the right standard. Others emphasised the need for iterative progression towards standardisation but with the understanding that everything might not be perfect from the beginning.

Question 3d: What are the key requirements for the presentation of comparable consumer environmental information?

Metrics

3.71 Some responses suggested using CO_2 equivalent or CO_2e as a single metric to represent all greenhouse gases associated with burning of fossil fuel (mainly CO_2 and non-CO_2).

3.72 There was support given for various ways to present information. Some respondents supported per-leg CO_2e per passenger metrics presented across all operators and modes of transport. Some respondents highlighted that flights may be shorter in terms of numbers of km than road or rail journeys due to the on-the-ground infrastructure required for those modes of transport so per pax km may be misleading if the overall journey has higher emissions due to the increased number of km. Some preferred kg CO_2 per journey, and some support was given for an efficiency rating of kg CO_2 per km – which could potentially mean airlines

could be ranked against their efficiency metric or compared against an industry average.

Contextualisation and comparisons

3.73 Comparisons with other modes such as car, coach, ferry, and train were considered to be important with some example text provided as an example that "taking this flight emits 10 times from CO_2 than taking the train". Eurostar was highlighted by some respondents as an important alternative to some short-haul flights between the UK and mainland Europe.

3.74 Some respondents mentioned that data used to calculate emissions through the methodology needs to be supplied in a standardised and consistent way, for example the average passenger load should be provided in a consistent way across all airlines. The data also needs to be available in the first place to enable comparability.

3.75 Some respondents mentioned that bar charts could be used to compare flights with other transport modes to show the scale of the differences in emissions.

3.76 Some respondents suggested that contextualised examples should be used to avoid confusion (for example how the flight compares to average annual climate impact) and some examples were provided by respondents to show the sorts of comparison that could be made.[31]

3.77 Respondents also considered that realistic comparisons should be made to viable alternative modes of transportation i.e. to rail where that is a realistic alternative and not (for example) for long-haul flights.

3.78 Some respondents suggested that consideration should be given to highlighting to consumers the effect of emitting CO_2 at altitude and some respondents considered that units for comparison should be applicable across different transport modes for example kg CO_2 per passenger km.

3.79 Respondents had different views regarding the usefulness of CO_2 figures for flights alone, with responses expressing that providing only figures without context would not enable informed consumer choices. Some respondents were clear that it was important to compare emissions from aviation to other transport modes as comparing just to other flights could lead to consumers assuming some flights are not harmful to the environment whereas all flights produce emissions that harm the climate.

[31] https://www.wearepossible.org/actions-blog/planes-vs-avocados and https://www.wearepossible.org/actions-blog/ditching-planes-for-trains

Accessibility and Transparency

3.80 Respondents considered that data should be accessible on all booking methods and that information should be independent of airlines and OEMs.

3.81 Some respondents suggested that links to more information (or pop ups or rollovers if accessible) should be provided to enable those who needed or wanted more information to be able to access it.

Methodology and Standards

3.82 Further to comments on standardised methodologies and independent audits of data captured above, some respondents considered that an independent standards body should enforce the implementation of a standard methodology and the presentation of outputs of that methodology.

3.83 Minimum standards on data quality and self-reported environmental data were considered to be important.

Standardisation and Consistency

3.84 There was broad support for the idea that any standards should apply to all airlines and be applicable to all places where flights are sold. Additionally, some respondents considered that the standards should apply across all modes of transport.

3.85 Consistency in metrics and presentation of information should be maintained regardless of the carrier's nationality, business model, and destination.

Question 3e: What are the key requirements for the presentation of accessible consumer environmental information?

Accessibility for All Users

3.86 There was support from a broad range of respondents to the view that any consumer environmental information should be accessible in various formats to ensure information is accessible to all, but in particular those with visual impairments, learning difficulties, dementia, limited literacy or fluency in English and limited dexterity.

3.87 Some respondents mentioned that information should meet web accessibility guidelines and work with screen readers.

3.88 Respondents also highlighted that any consumer education conducted to promote the information should reach a wide range of media and local channels to ensure it is available and accessible to those who may need it.

Clear and Understandable Presentation

3.89 Some respondents expressed the view that information should be clearly explained and in a simple, straightforward, and easy-to-understand format.

3.90 Some respondents mentioned that infographics and equivalents can help with comprehension and contextualisation.

3.91 Some respondents suggested that clear and understandable information should be provided throughout the flight search and booking journey and contact information for help and assistance should be clearly displayed.

Availability and Standardisation

3.92 Some respondents gave the view that information should be available globally and free of charge. It should be prominently displayed at the point of sale and in a standard place during the flight search and booking journey.

3.93 As in responses to other questions, some respondents suggested that any methodology should be published and available for scrutiny.

3.94 There was broad support from a range of respondents that the same information should be provided regardless of the booking method (whether on different sites, including corporate travel booking platforms or on a laptop or a mobile phone) or airline, online travel agent or tour operator.

3.95 Some respondents suggested that having prescriptive rules around how information is displayed risks stifling innovation and could have unintended consequences. In addition, some respondents suggested that the UK should seek international alignment wherever possible.

Comparability and Context

3.96 Some respondents mentioned that comparisons with rail, and the ability to filter or sort flight options by kg CO_2 numbers could enable consumers to review more sustainable transport options.

3.97 There was support for providing precise information on the climate impact of aviation alongside the true journey time (including time taken to check in and go through airport security and collect baggage on arrival), and that context should be provided to help consumers understand how aviation compares with other travel choices.

Confidentiality and Data Ownership

3.98 Some respondents considered that sensitive data, such as fuel burn by aircraft type, should be shared voluntarily by airlines while ensuring data confidentiality and ownership.

3.99 There was support for a central body aggregating and distributing CO_2 passenger and cargo emissions data globally.

Question 3f: What are the key requirements for the presentation of useful consumer environmental information?

Accurate and Trustworthy Information

3.100 Some respondents considered that accurate data is crucial for presenting useful consumer environmental information and that consumer trust is key in providing reliable and trustworthy information.

3.101 Some respondents suggested that information should be science-based and transparent, clearly presented in a simple format.

3.102 Transparency and standardisation across aviation were considered to be key to the usefulness of consumer environmental information.

Comparability and Context

3.103 Some respondents expressed the view that comparability was very important. Consumers should be able to compare between airlines, flight lengths, and other modes of transport. Some respondents were keen that when comparing between modes of transport embedded emissions from infrastructure (for example airports as compared to train tracks and stations should be included as part of the calculation.

3.104 Some respondents considered that comparisons with an average annual carbon footprint would provide helpful context.

3.105 Providing information specific to the flight searched for rather than generalised estimates was considered to be valuable.

Enabling Informed Choices

3.106 Some respondents expressed a view that users could be helped to make informed choices by providing filtering options during searches for flights based on CO_2 emissions and alternatives such as direct flights and different seat classes.

3.107 Some respondents were keen that consumers should be encouraged to consider shorter flights (or alternative modes of transport) and that there should be more information available on the work airlines have undertaken to improve their environmental performance as this could influence travel decisions.

Information inclusion on tickets and planet health warnings

3.108 Some respondents expressed views that information should be included on tickets, confirmation emails and boarding passes just like other information

associated with a flight. Other respondents mentioned that boarding passes are space limited and used in time critical environments where any additional information may lead to potential complications or confusion.

3.109 Planet health warnings similar to public health warnings on cigarettes or other products with adverse individual and societal effects were considered by some respondents to be needed to increase awareness on the emissions, health and other adverse impacts of aviation — for example "flying releases greenhouse gases which increases global warming". Some respondents considered that consumers should be asked to confirm that they still wish to book after being provided with a planet health warning.

3.110 Different users may prefer or require information presented in different ways, and consultation with consumers was recommended on what information, how and when it should be presented including further consultation with consumers who may have accessibility requirements.

Estimations and Contextualisation

3.111 Some respondents provided information about the value of consumer environmental information for corporate travel bookers. It was considered that providing context and enabling comparisons with colleagues or work peers can aid comprehension for business travellers.

Offsetting, SAF and Infrastructure Considerations

3.112 There were a range of views given on the benefits and disadvantages of including offsetting and SAF in any methodology or information provided to consumers as mentioned in responses to earlier questions.

3.113 Some respondents were keen that when modal comparisons were made, the infrastructure impacts of road, rail, and shipping industries should be recognised in comparison with aviation.

Question 4: What consumer environmental information should be presented to consumers?

Emissions and Efficiency

3.114 Some respondents suggested that clear and accurate information on kg CO_2 or CO_2e per passenger kilometre or per passenger journey should be provided.

3.115 Comparison with an average annual carbon footprint, everyday activities, and other modes of transport, especially rail, were suggested to help consumers understand the climate impact of flying.

Scope and Context

3.116 Some respondents were keen that information should clearly specify the scope of emissions covered, such as tank-to-wake tailpipe or well-to-tank upstream and differentiate between CO_2 and CO_2e.

3.117 Examples of contextualisation provided included presenting the current concentration of CO_2 in the atmosphere and tracking progress towards temperature goals.

Comparability and Modal Shift

3.118 Some respondents considered that consistent measurements and comparable metrics could enable evaluation of emissions (alongside other factors important to consumer choice like price and convenience).

3.119 Simple and accessible presentation formats, including letter-based energy ratings used in domestic appliance labelling and EPCs received wide-ranging support from respondents.

3.120 Some respondents considered that it was important that providing the different impact on emissions caused by choosing different seating class can help passengers make informed choices.

Other Environmental Impacts Including Noise

3.121 Some respondents were keen that the CAA should consider including information on air quality and aviation noise and their impacts on public health. Information on noise certification values and the size of the population overflown could be included for individual airports.

3.122 Some respondents were keen that consumers should be provided with more information on aviation's impact on biodiversity, including the use of single use plastic onboard.

3.123 As mentioned in responses to other questions, there were a range of views on the inclusion of non-CO_2 emissions with some respondents keen that non-CO_2 should be included in methodologies as soon as possible and some wanting more scientific certainty before including it. Some respondents mentioned that other sectors do not attempt to communicate with consumers about complex and scientifically uncertain matters such as non-CO2 impacts of their journeys.

Question 5: When should consumer environmental information be presented to consumers? (For example, on the results page when searching for a flight, on a boarding pass or after a flight).

Early in the Booking Process

3.124 Some respondents suggested that consumer environmental information should be presented as early as possible during the booking process at the earliest opportunity pre-contract. Some respondents suggested that it should be a requirement for it to be presented as early in the booking process as possible, and to present the information everywhere that flights are compared or sold, not just by airlines. Some respondents suggested that it could be difficult for all parts of the industry to provide the information at the same point in the booking process if the guidelines were overly prescriptive and considered that the information being accurate and consistent was more important than placement.

3.125 Some respondents considered that information at the point of sale, before booking, and on the results page of flight searches will be important to enable consumers to make informed choices on whether, where and when to fly.

3.126 Respondents considered that the same environmental information should be available on all booking methods, including both airline websites and third-party comparison sites to improve the levels of consumer trust in that information.

Post-Booking and Post-Flight

3.127 Some respondents considered that providing environmental information after the flight has been booked, such as on boarding passes, confirmation emails, or in-flight magazines, could increase awareness and support consumers with long-term behaviour chance including carbon budgeting.

3.128 There was support expressed for more data being available post-booking in order to enable analysis for corporate and travel managers.

3.129 Some respondents considered that if environmental information based on the emissions on the actual flight taken was available after the flight it could be useful for the individual consumer, corporate environmental accounting and enable better accuracy in future estimates for that flight.

Enabling Informed Choices

3.130 Some respondents expressed the view that the reason environmental information should be presented was to enable users to choose flights with lower emissions and encourage consideration of other modes of transport.

3.131 There was wide ranging support for providing more information on the true journey time, alongside more available schedule information for different modes, as well as links to driving directions.

Engagement and Consultation

3.132 Some respondents considered that the CAA should continue engaging and consulting with stakeholders to ensure effective and timely implementation of this work.

3.133 Some respondents considered that it would be difficult for those parties who sell flights indirectly (such as travel agents or tour operators) to be required to provide information on a mandatory basis and sought clarity in future consultations on whether the CAA considered the airline or travel agents to be responsible for providing environmental information.

3.134 Some respondents considered that if information is provided on the flight element of a consumer's holiday when buying a package holiday, then that should be in the context of the emissions of the whole holiday.

Question 6: How should consumer environmental information be presented? For example, is kg CO_2 per journey appropriate and / or should consumer environmental information be presented as a comparison with other transport modes or other equivalent activities?

Presentation Formats

3.135 Some respondents suggested that consumer environmental information could be presented in various formats, including kg CO_2 per journey, kg CO_2 per mile or kilometre, or as a letter-based energy rating similar to those used for domestic appliances and EPCs).

3.136 Some respondents considered that kg CO_2 per journey might be well understood by the industry but that consumers would not understand it so equivalents and contextual information should be provided to help consumers better understand the CO_2 numbers.

3.137 Some respondents were supportive of presenting comparisons with a typical or average flight on that route which they considered to be easier to understand than kg CO_2 on its own.

Comparison with Other Modes and Promotion of Other Modes Where Appropriate

3.138 Some respondents considered that comparison with other transport modes, such as car, rail, or alternatives to travelling such as online meetings, can help consumers make informed choices and understand the environmental impact of their travel options. Some respondents stressed that would only be acceptable where those other modes are realistic options (for example there is no realistic alternative for a transatlantic flight). Some respondents were keen that other

modes were promoted as an alternative to flying for short-haul and domestic routes, in particular rail options should be promoted where feasible.

Enable Informed Choices

3.139 Some respondents expressed the view that the presentation of consumer environmental information should empower users to choose flights with lower emissions and encourage them to consider other modes of transportation.

3.140 True journey time and information on journey necessity as well as non-CO_2 data were considered by some respondents to be helpful information to enable informed choices.

Standardisation and Methodology

3.141 As set out in responses to previous questions, there was support for standardisation of methodology and presentation formats and that any methodology should be published and available for scrutiny.

3.142 Respondents again mentioned that consumer environmental information should be based on reliable data sources and adhere to industry standards.

Consideration of overall goals

3.143 Some respondents asked that the CAA are clear on what the intended goals and outcomes of presenting consumer environmental information are in order to ensure that we can best meet those goals.

Question 7: Please list/identify examples of consumer environmental information in other sectors which enable complex information to be provided in an accurate, understandable, standardised, comparable, accessible and useful way.

Environmental Labelling and Certifications

3.144 Examples from other sectors given by respondents included Blue Flag for beaches and marinas, green building certifications like Leadership in Energy and Environmental Design ("LEED"),[32] EPCs, Organic certification, and labels for sustainable investments.

3.145 Respondents said that these labelling schemes provide standardised and comparable information about the environmental attributes of products or services.

[32] https://www.usgbc.org/leed

Comparisons and Relative Emission Savings

3.146 Some respondents suggested that presenting information on relative emission savings compared to the average emissions on a particular route can help environmentally conscious consumers choose more sustainable options.

3.147 Examples given included bar charts of emissions for food (i.e. meat based diet compared to vegan), CO_2 savings compared to driving or flying on train websites, and the use of a seven-point scale or traffic light system.

Other Sectors and Modes of Transport

3.148 Some respondents considered that the aviation sector is more advanced in providing environmental information compared to other sectors and modes of transport.

3.149 But other respondents provided a range of examples of information in other sectors including fuel economy labelling for cars and the Motor Vehicle Code, the EcoTransIT calculator for freight shipment emissions, and the US Department of Agriculture's Greenhouse Gas Equivalencies Calculator.

Chapter 4

Summary of responses – consumer protection (questions 8 – 10)

4.1 The Call for Evidence asked questions about how the regulatory framework could be used to better protect consumers from misleading information.

4.2 Overall, respondents stressed the need for the CAA to collaborate with industry and other regulators including those globally and in other sectors. Many suggested that there was a role for the CAA in developing best practice guidelines, ensuring that reliable and standardised data and standards were used, and in monitoring and auditing that data to prevent potential greenwashing. Some suggested that the CAA should have the power to fine information providers.

Question 8: How should we (the CAA) use our existing powers to protect consumers from misleading environmental information?

CAA Collaboration

4.3 Similar to responses to previous questions, respondents raised the importance of collaborating with the aviation sector and the travel industry, IATA, EASA and other regulators, and industry best practices to promote harmonization of CO_2 methodologies and standards.

4.4 Some respondents suggested that the CAA should publish best practice guidance which it could enforce and enable complaints from consumers on environmental information.

4.5 There was broad support for the CAA to work with the Advertising Standards Authority ("ASA"), the Competition and Markets Authority ("CMA"), and Trading Standards on the area of greenwashing and make use of its concurrent consumer protection powers in cases of serious and systemic consumer detriment. Some respondents suggested a rolling compliance programme similar to the CMA's monitoring of its Green Claims Code, while being careful to avoid duplication to avoid compliance burdens on businesses.

Access to Data and Standardisation

4.6 Some respondents outlined that the CAA has a vital role in ensuring that reliable, standardised data is accessible to industry to avoid inconsistencies in emissions reporting and allow existing methodologies to become even more robust.

4.7 Some respondents considered that the CAA could have a role in ensuring the use of global and existing aviation standards (potentially by endorsing an existing widely used methodology), ensure data and methodology standardisation, and provide a clear methodology framework.

4.8 Publishing a methodology and endorsing a single, reliable, and transparent emissions disclosure platform is suggested.

Transparency and Independence

4.9 Some respondents considered that the CAA should be transparent about its independence and quote reliable sources. It should state its independence, validate information, and quote authoritative sources.

Question 9: Please list/identify examples of regulatory regimes in other sectors that work well to protect consumers from misleading environmental information.

Other UK regulators

4.10 The CMA and ASA were identified as authorities with powers to address misleading and false environmental claims.

4.11 Ofgem's efforts to protect consumers in the energy sector and investigate misleading claims were highlighted.

4.12 Examples of regulatory regimes in other sectors such as alcohol labelling, food labelling (Food Standards Agency), Forest Stewardship Council certification scheme, investment risk warnings and tobacco labelling were mentioned as effective in protecting consumers from misleading information.

4.13 Financial Conduct Authority sustainability disclosure requirements and investment labels consultation[33] were also mentioned.

Other Regulatory Regimes

4.14 EU Regulation 2017/1151 on CO_2 emissions of cars and the European Union's Eco-Design Directive were cited as standards that could be useful.

4.15 Proposition 65 in California, which requires businesses to provide warnings about exposure to harmful chemicals, was mentioned.

4.16 Some respondents mentioned the Global Sustainable Tourism Council manages sustainable travel and tourism standards, provides accreditation to Certification Bodies, and unifies various sustainability standards under a single set of criteria.

[33] https://www.fca.org.uk/news/news-stories/fca-updates-sustainability-disclosure-requirements-and-investment-labels-consultation

Complexity of the Aviation Industry

4.17 The aviation industry's complexity was mentioned by some respondents who wanted to highlight the need for global alignment and encouraged the CAA to both work towards global alignment but also consider any aviation industry-specific factors.

4.18 The limitations of traffic lights as a simplification tool for aviation were mentioned while other responses stated that regulatory regimes applicable in other sectors may not easily translate to the aviation industry due to the variables of business models, aircraft types, and cabin configurations.

Question 10: How should the provision of consumer environmental information be monitored?

Monitoring and Enforcement

4.19 Some respondents suggested that the CAA should monitor and investigate environmental information provided by airlines, including auditing data and methodology.

4.20 Suggestions were made by some respondents for the establishment of a central, independent entity to calculate, monitor, and audit CO_2 emissions data, ensuring data confidentiality and ownership while enabling global distribution of results.

4.21 Respondents suggested that the CAA should have the power to fine airlines and work with other regulators, such as the CMA and ASA, to address greenwashing including misleading or false environmental claims. In addition, respondents suggested that the CAA should work with Alternative Dispute Resolution bodies to handle complaints related to environmental information.

4.22 There were suggestions provided by some respondents that the CAA should establish a framework for consumer environmental information along the lines of the accessibility frameworks for airlines and airports.

4.23 The need to allow for airlines to make operational changes without penalties if that changes the actual emissions information (i.e. using a less efficient aircraft) and the limitations in terms of accuracy when data is provided well before the flight was also highlighted.

Chapter 5

Summary of responses - potential and existing methodologies for the provision of consumer environmental information (questions 11-13)

5.1 The Call for Evidence sought more detailed views on the factors and data that should be included in a standard methodology, including asking for examples from existing methodologies. It also sought views on whether non-CO2 emissions should be taken into account.

5.2 Respondents suggested a wide range of factors that should be included in a standard methodology, covering the aircraft and engine type, fuel type, passenger loading, routes and the weather. Some suggested information about the airports could also be included. Actual fuel and passenger loading data is used by many airlines, giving greater accuracy, but some respondents noted that some of this data may be commercially sensitive so may limit the breakdown of data for specific routes. Others noted that adding indirect factors to domestic flights would not provide an accurate total for those flights.

5.3 Several respondents suggested that presenting the information as Kg CO_2 per passenger km would allow for greater consistency and comparability between airlines. In relation to comparability with other transport modes, some noted that those modes (particularly ferries and rail) also used disparate methodologies so comparability would be difficult.

5.4 Other respondents noted that the industry was already discussing the alignment of methodologies internationally, and that they already report on aviation's emissions through various frameworks. Some suggested that there needed to be consistency across the UK Government's current emissions accountancy methods.

5.5 There were differing views on whether non-CO2 impacts should be taken into account. Many thought that they should be, given the current concern that this forms a high proportion of aviation's overall environmental impact. But others noted that this would be extremely complex to do and stressed that there needs to be more scientific research into the magnitude and effect of non-CO2 impacts before any decision is made on this. Some suggested that more industry collaboration is needed and more needs to be done to aid consumer understanding of these issues.

Question 11: If you have an existing relevant methodology for calculating emissions from a journey:

a. please describe it and the reasoning behind it, including details of the types of information you include in the methodology and the assumptions you make.

b. If your organisation has made a conscious choice not to include certain types of potentially relevant information in your methodology yet, please set out the reasons why.

c. If potentially relevant information may be included in your methodology in the future, please describe the information and any necessary background to its potential inclusion.

Use of Existing Methodologies and Data

5.6 Respondents provided a wide range of information in response to this question. Some respondents stated that airlines utilise various methodologies and data sources, including IATA's RP1726 methodology, BEIS conversion factors, EUROCONTROL calculations, and data reported to regulatory bodies such as the US DOT and ICAO. Some respondents mentioned that:

- it would be beneficial if there was consistency across UK government in emissions accountancy methods used,
- there are disparate methods used for travel modes including ferries and rail and
- BEIS's inclusion of indirect factors to domestic flights has led to inaccurate information provided to consumers on domestic flights.

5.7 Some airlines do their own calculations based on accurate data on fuel, load factors, cabin configuration, and flight-specific parameters, with some publishing environmental information in their annual reports.

5.8 Travalyst aims to expand their aviation framework over time beyond CO_2 emissions in collaboration with academics and industry experts.[34]

5.9 The International Council on Clean Transportation ("ICCT") proposed a three-step procedure for modelling commercial aviation emissions. First, the fuel burn of a flight is calculated, ideally using information directly from the airline, otherwise by aircraft performance modelling,[35] then that fuel burn is apportioned

[34] https://travalyst.org/work/aviation-industry/

[35] For example: Piano, OpenAP openAVEM and EEA's Aviation Emissions Calculator

to each passenger on board using operational data on seating class configuration and passenger load factor, and finally the fuel burn per passenger is converted into CO_2 emissions (for example Jet A fuel releases 3.16 kg of CO_2 per kg of fuel burned) and, optionally, non-CO_2 warming impact. The ICCT suggested that the CAA could recommend using a single multiplier on CO_2 emissions to represent the non-CO_2 emissions but that a single multiplier would not capture local variations and would not enable consumers to be fully informed when trying to choose a lower emitting flight.

5.10 The Global Aviation Carbon Assessment (GACA) model developed by the ICCT is used to estimate emissions from global commercial passenger aviation activities.

Factors in Methodologies

5.11 Respondents provided factors considered in their methodologies including actual fuel burn, route distance, aircraft and engine models, passenger and freight load factors, operating empty weight of the aircraft, aircraft age, seating and class configuration, atmospheric conditions, weather, efficiency coefficients, routing, and maintenance condition.

Accuracy and Consistency

5.12 The use of accurate and consistent data was emphasised, with some methodologies claiming to have a <3% variance against airline reports.

5.13 The Kg CO_2 per pax km metric was considered an accurate and consistent measurement by some respondents, other respondents highlighted that it is important for comparability that per-passenger emissions should be presented in the same unit. Kg CO_2 and kg CO_2e were mentioned by many respondents.

Confidentiality and Commercial Sensitivity

5.14 Some respondents mentioned the need to protect commercially sensitive data, which respondents suggested may limit the breakdown of emissions data by specific routes.

Existing Collaboration and Reporting

5.15 Some respondents mentioned that airlines already engage in discussions with industry organisations such as IATA, EASA, and Travalyst to develop consumer environmental information and align methodologies.

5.16 Some respondents mentioned that airlines report emissions under regulatory schemes such as EU, Swiss, and UK ETS, as well as CORSIA.

Question 12: If you haven't developed a methodology, what would you expect to see in a methodology (for example different aircraft types, fuels, average load factors, the airline's overall fleet, and routes including generalised indicators relating to destination / origin airports)?

Factors in Methodologies

5.17 Some respondents mentioned that methodologies should consider multiple varying factors such as actual route, fuel burn and efficiency of aircraft type (including where retrofits have occurred to incorporate innovations like winglets to the airframe), engine type, aircraft age, fuel consumption, average load factors, passenger, baggage and seat weights, seat configurations and classes, cargo, a factor added to the great circle distance, prevailing wind (although generally cancelled out on a return trip), RFI, and inclusion of SAF lifecycle emissions reductions.

Emissions Comparison and Efficiency

5.18 As in other questions, some respondents suggested that methodologies should allow for comparisons with other modes of transportation.

5.19 CO_2 emissions per passenger km was considered an efficiency metric and would enable comparison between airlines operating different routes / business models.

5.20 Bronze, silver, and gold standards in the level of confidence in the outputs were proposed, indicating different levels of detail in the methodology and accuracy of the data.

Other Considerations

5.21 Other things that respondents mentioned were that the methodology could account for the environmental impact of the airport of departure and whether the flight was undertaken for disaster relief purposes.

5.22 There was also support for providing consumer environmental information as a market pull for investments in fuel efficiency, SAFs, more efficient aircraft and new technologies.

Question 13: How should we (the CAA) take non-CO_2 emissions and their effects into account?

Importance of Including non-CO_2 Emissions

5.23 Many responses emphasised the need to include non-CO_2 emissions in the methodology and some respondents mentioned the increasing consensus that

the non-CO_2 emissions of aviation have a positive radiative forcing effect, meaning that they negatively affect climate change.

5.24 Non-CO_2 emissions were understood by many respondents to be a high proportion of the overall environmental impact of aviation.

5.25 Including non-CO_2 emissions was considered necessary by some respondents to avoid greenwashing and provide a comprehensive picture to consumers.

Challenges and Uncertainties

5.26 There was broad acknowledgement from many respondents that there are challenges and uncertainties in quantifying the exact impact of non-CO_2 emissions.

5.27 A number of respondents mentioned that the scientific community is still studying non-CO_2 effects, and respondents also mentioned a lack of scientific consensus on the magnitude of non-CO_2 impacts. Some respondents recommended that the CAA defer publishing any requirements on reporting non-CO_2 emissions until there is a scientific consensus on the best approach. While others suggested that if estimates were provided to consumers on the non-CO_2 emissions of their flight that there should be transparency about the current uncertainties.

5.28 Variables mentioned by respondents that impact non-CO_2 emissions include ambient temperature, altitude, thrust, humidity, and aircraft engine type, age and condition. Some respondents mentioned that short-haul aircraft typically cruise at lower altitude and primarily during the daytime, and therefore may reduce the risk of contrail formation. Therefore, as a result, short-haul flights should not have a generic multiplier applied for non-CO_2. Some respondents mentioned that contrails are not always formed, and if they are formed, they are not always persistent and may have a warming or cooling effect. Respondents also highlighted the magnitude of impact can also depend on location, time of day, time of year and weather amongst other things.

5.29 It is important to note that the responses highlighted different perspectives and considerations regarding the inclusion and treatment of non-CO_2 emissions, reflecting the ongoing discussions and uncertainties surrounding this topic.

Methodological Considerations

5.30 Some respondents suggested using a single multiplier for non-CO_2 emissions, (mentioning 1.9 and “the CO_2e metric”) but other respondents suggested that including a single multiplier would disincentivise reducing the non-CO_2 impacts of aviation and cause misinformation and inaccurate results.

5.31 Incorporating non-CO_2 emissions could involve providing links to more information or including a high-level disclosure.

Industry Collaboration and Research

5.32 Some respondents suggested the need for further collaboration with industry stakeholders, scientists, academics, and experts to better understand and reduce the impacts of non-CO_2 emissions.

5.33 Support for further research on non-CO_2 emissions was also suggested.

Consumer Awareness

5.34 Some respondents suggested that consumers should be made aware of the latest science (and its complexities and uncertainties) regarding the size and impacts of non-CO_2 emissions.

5.35 Some proposed including appropriate information on non-CO_2 to inform consumers in a fair and balanced manner.

Chapter 6

Summary of responses – data (questions 14 & 15)

6.1 The Call for Evidence sought information on the datasets that might be available to use in a standard methodology and whether there should be a mandatory requirement for airlines to provide data to the CAA.

6.2 Several datasets were mentioned, including airlines' existing datasets, which are readily available to them and are already used for reporting. But many respondents said these must be accurate and credible, so would need to be independently verified. Some argued that reliable, verifiable and transparent open-source data would enable greater accuracy, comparability and trust. Again, the consistency of standards and methodology was highlighted.

6.3 There was some support for mandatory reporting to the CAA and some suggestions for CAA audits or spot checks, with the CAA then reporting on each airline's performance. Others felt that reporting should be voluntary, at least until there is a global standard methodology.

Question 15: Which existing standardised datasets do you think could be repurposed (with the necessary safeguards) to provide environmental consumer information? For example, the International Civil Aviation Organization (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) CO_2 Estimation and Reporting Tool.

Utilising Existing Airline Datasets

6.4 Many responses suggested using airlines' existing datasets for emissions calculations, as respondents suggested that they are readily available and reported for schemes like CORSIA and EU ETS.

6.5 Ensuring accuracy and credibility of airlines' data were seen as important safeguards.

6.6 Some respondents emphasised the need for airlines to apply a standardised methodology for consistency in calculations.

Specific Standardised Datasets

6.7 The ICAO CORSIA CO_2 Estimation and Reporting Tool ("CERT") was mentioned as a potential dataset that could be repurposed.

6.8 I's Small Emitters Tool was highlighted as a highly accurate dataset.

6.9 The IATA calculator and the IATA RP1726 methodology were recommended by some respondents, while other respondents raised some concerns about the omission of non-CO_2 emissions and SAF.

6.10 The European Environment Agency was mentioned as providing technical guidance for national emission inventories, supporting the reporting of emissions data under the UNECE Convention and the EU National Emission Ceilings Directive. Its guidebook offers expert assistance for compiling atmospheric emissions inventories.

Independent Verification

6.11 The independent verification of emissions data was seen by some respondents as crucial for ensuring accuracy and consumer trust. They highlighted existing independently verified emissions, such as those verified by organisations like Verifavia.

Considerations on Precision and Consistency

6.12 Some respondents emphasised the importance of consistency in standards and methodologies across aviation.

6.13 Precision of results of the calculations was seen by some respondents as less important compared to consistency of results in order to build consumer trust, access, and understanding of the environmental information.

Access to Reliable, Verifiable and Open-Source Datasets

6.14 Some respondents suggested the importance of enabling greater access to reliable, verifiable and open-source datasets as a way of ensuring progressively more accurate and comparable environmental consumer information.

Risk of mixing different standards

6.15 Concerns were raised by some respondents about mixing different standards and the potential prohibition or advisability of repurposing specific datasets like the ICAO CORSIA CERT.

Question 15: Should there be a mandatory requirement for airlines to provide relevant environmental data to the CAA and if so, how should this be aligned with existing requirements?

Mandatory Reporting

6.16 Some responses supported a mandatory requirement for airlines to provide environmental data to the CAA. Some respondents considered that the CAA could add value post-Brexit by collating a registry of information about aircraft operating in the UK due to the loss of access of UK aviation organisations to EASA fleet databases.

6.17 Mandatory reporting was seen as necessary by some respondents to ensure accuracy and consistency in environmental information and some respondents emphasised the importance of aligning with existing mandatory obligations such as CORSIA, UK and EU ETS, and SECR.

Data Accuracy and Verification

6.18 Accuracy of data was highlighted as a key consideration by some respondents, and there was support for external verification of the provided data by a neutral third party.

6.19 Spot checks and audits of airline and flight search websites by the CAA were suggested as a way to ensure data reliability. Some respondents recommended that results from these spot checks should be published by the CAA.

Framework and Standards

6.20 Establishing a framework or ranking system for airlines' environmental performance across a range of measures, which could then be reported on (potentially by the CAA) was proposed by some respondents.

6.21 As in responses to other questions, some respondents encouraged the CAA to align with international standards to ensure consistency across borders.

Transparency and Public Availability of Data

6.22 Some suggested that if reporting is mandated, the data should be publicly available.

6.23 Transparency was seen by some respondents as crucial, and there was some support for neutral third-party verification to enhance trust.

6.24 Some respondents suggested that all third parties displaying fare and schedule information should have access to relevant environmental data from airlines on fair, reasonable, and non-discriminatory (“FRAND”) terms.

6.25 Environmental data was seen by some respondents to be as important as safety standards and that it should be presented alongside other relevant consumer information.

Voluntary vs Mandatory Reporting

6.26 While many supported mandatory reporting, there were some respondents that suggested that reporting of information to the CAA should be voluntary, particularly until there is a global standard methodology in use.

6.27 Consideration was given by some respondents to the potential additional regulatory burden on smaller airlines.

Chapter 7

Summary of responses – relevant research (question 16)

7.1 The Call for Evidence sought information on any relevant consumer research that may have been undertaken.

7.2 Several respondents provided links to research or offered insights into consumer preferences. These show that, in general, consumers are increasingly interested in more sustainable travel want more accessible and understandable information that they can trust to help them make their travel choices.

Question 16: The CAA published research on what consumers want from consumer environmental information in 2021. Have you undertaken similar or related relevant research which you can share with us?

Additional Research and Sources

7.3 The Consumer Council for Northern Ireland provided its research on greenwashing, sustainable activities, and consumer trust, highlighting the need for more information and independent verification.

7.4 Other respondents offered insights into consumer preferences, interests, and behaviour related to sustainable travel as well as greenwashing.[36]

7.5 One respondent referred to a November 2022 YouGov poll which suggested that a third of Britons are willing to pay extra fees to offset the negative environmental impact of their flight.[37]

Consumer Demand and Behaviour

7.6 In research referred to or provided by respondents, in general, consumers expressed a desire for more accessible and easily understandable information on more sustainable travel and lower emissions.[38]

[36] For example: https://www.beuc.eu/sites/default/files/publications/beuc-x-2020-116_getting_rid_of_green_washing.pdf

[37] https://yougov.co.uk/topics/politics/articles-reports/2022/11/22/most-people-are-worried-about-climate-change-what-

[38] For example: ABTA Holiday Habits 2022 - https://www.abta.com/sites/default/files/media/document/uploads/ABTA%20Holiday%20Habits%202022.pdf and https://www.which.co.uk/news/article/is-carbon-labelling-the-future-of-travel-aOro65V7W0A0

7.7 Lack of awareness and understanding of airlines' environmental sustainability initiatives and offsetting programs was mentioned by some respondents.

7.8 Research provided or referred to by respondents indicated a growing demand for per passenger emissions data and an interest in booking sustainable travel options.

7.9 Some respondents suggested that some consumers actively seek sustainability information when making transport choices and are willing to reduce air travel to achieve a more sustainable lifestyle.

7.10 Some respondents mentioned that some consumers have expressed a preference for obtaining environmental information directly from airlines rather than government sources.

Trust and Greenwashing

7.11 Concerns were raised regarding consumers' lack of trust in companies' green claims and the need for independent verification or certification.

7.12 Standardisation or the use of a single symbol was suggested as a means to provide clarity and credibility for sustainable products and services.

General Public Interest

7.13 Information provided from airlines, booking sites, and other respondents suggested a general interest in sustainable travel and a desire for trusted and reliable results.

7.14 Noise and its impact on communities near airports were considered important factors to address by some respondents.

7.15 Overall, the research and sources provided indicated that consumers are increasingly interested in sustainable travel options and are seeking clear and accessible information to enable informed choices. Trust, transparency, and independent verification play key roles in addressing consumer concerns regarding greenwashing and fostering confidence in environmental claims.

Chapter 8

Summary of responses – potential pitfalls and any other additional information (questions 17-19)

8.1 The Call for Evidence noted that providing accurate, reliable, comparable environmental information to consumers was complex, and sought views on potential pitfalls to be aware of, and how we might mitigate them.

8.2 Respondents raise several concerns, including:

- Consumers may not understand the information or there may be too much information for passengers to process – proposals should be tested with focus groups and social research, with awareness campaigns to aide consumers' understanding.
- There may be a lack of trust in the information – respondents said data accuracy, objectivity and truthfulness will be key to mitigating this, and methodologies and data should be independently verified, possibly with a kitemark to provide assurance.
- There may be a financial burden on airlines to provide this information, and potential for market distortion if the requirements only apply to UK registered airlines – respondents stressed the need for international collaboration and global standards.
- The information requirements may be too complex for airlines to provide, and they will need time to implement any new requirements - some respondents suggested that the CAA publishes content and design guidance on the requirements.
- Late notice operational changes to aircraft may lead to inaccurate information about the actual flight.
- Does the CAA have the relevant powers, and is it using its existing powers effectively? Some respondents suggested the CAA may need more powers, including the ability to penalise airlines who do not comply with the requirements.
- Whether or not to include non-CO_2 information – it is very complex but we could be significantly under-reporting if it is not included.
- How can the development of new, low-carbon fuels be taken into account?
- There must be an international approach – the UK should not introduce its own methodology.

- Consumers may be encouraged to use unreliable off-setting schemes – some respondents considered all sale or promotion of offsets at the time of booking should be banned.

Question 17: What do you think are the potential pitfalls relating to the provision of consumer environmental information?

Consumer Understanding and Trust

8.3 Concerns were raised about consumers' understanding of environmental information and any potential indifference or resistance towards it.

8.4 Accuracy, objectivity, and truthfulness of the information provided were seen as crucial for the credibility of the environmental information. Additionally, there was careful consideration of the maturity and sustainability of decarbonisation solutions. Lack of trust in airlines and the potential for greenwashing were also identified as pitfalls of environmental information.

Additional financial burdens for businesses

8.5 Some respondents raised concerns that providing consumer environmental information might add an additional financial burden on an industry struggling to recover from the impact of the pandemic.

8.6 Also, some respondents raised the risk of market distortion caused by any new requirements applied to UK-registered carriers only, in an internationally competitive industry.

Standardisation and Simplicity

8.7 Multiple standards and lack of comparability were highlighted by some respondents as potential pitfalls which could lead to conflicting consumer environmental information. A risk highlighted by some respondents was that information requirements may be too complex and there may be too much information provided to consumers while searching for and booking flights.

8.8 Support was provided for a single, internationally accepted reporting standard to minimise confusion and align with global standards.

8.9 Balancing simplicity and accuracy in the provision of information was emphasised by some respondents – oversimplifying could lead to less accuracy.

8.10 Some respondents sought clarity on how any unforeseen events like late notice changes to aircraft (for example) might be handled by any future system or framework.

8.11 Some respondents suggested that airlines should be required to share their emissions data on FRAND terms with the intermediaries with which they share

schedule and fare information, for example Global Distribution Systems ("GDS").[39]

8.12 Other respondents were keen that any system would be able to be updated with information on SAF mandates and fleet renewals to ensure accurate information which would reflect emissions reductions in aviation.

Regulatory Framework and Enforcement

8.13 As mentioned in responses to previous questions, concerns were raised about the potential lack of enforcement powers of the CAA although some respondents considered the CAA needed to use its existing powers more effectively and make use of its soft power leverage to achieve better outcomes until global methodologies are implemented.

8.14 The need for regulation to ensure consumer trust, address climate impacts, and prevent potential inaccuracies or underestimations was emphasised.

Data Quality and Methodologies

8.15 Pitfalls related to data accuracy, manipulation, traceability, and the use of existing metrics were mentioned.

8.16 Similar to the responses to previous questions, the inclusion of non-CO_2 emissions and full lifecycle emissions were considered important by some respondents to avoid underreporting and underestimation. Some respondents highlighted that by not including non-CO_2 emissions, aviation could be misrepresented as having a smaller carbon footprint than alternative methods of transport.

8.17 The need for ongoing methodology development and consideration of new fuels and technologies was highlighted.

International Alignment and Perspective

8.18 There was strong support from some respondents that the CAA should not develop its own methodology in isolation and that taking a UK-centric viewpoint would be a potential pitfall. Respondents suggest that the CAA should instead seek to work closely with IATA and ICAO to continue to shape and implement a globally recognised solution. Other respondents encouraged the UK government and the CAA to consider their long-term strategies for engaging internationally, including engagement with EUROCONTROL, the use of other forums such as European Civil Aviation Conference ("ECAC") and further engagement with EASA on its flight ecolabel system.

[39] https://en.wikipedia.org/wiki/Global_distribution_system

8.19 Risks of selective data use, potential discrepancies between UK and non-UK requirements, and difficulties in comparing different approaches were mentioned.

8.20 Some respondents raised the risk that some businesses outside of the CAA's scope might provide inaccurate or incomplete data (for example not including non-CO_2 in emissions estimates) and thereby have a competitive advantage.

Consumer Behaviour and Alternatives

8.21 The potential impact on consumer behaviour and the importance of providing alternatives and steering towards more sustainable options were discussed.

8.22 The risks of people ignoring the information or being encouraged to use unreliable offsetting schemes were raised.

Question 18: What strategies should we consider to mitigate potential negative consequences?

Timeframe

8.23 It was mentioned by some respondents that it was important that the CAA should introduce any new frameworks quickly but allow sufficient time for industry to implement them. Other respondents highlighted that the CAA's website should be kept up to date in a clear and accessible way on the process, timeline and any proposals to ensure consumers and industry are kept informed.

8.24 Some respondents considered that the CAA should not let the lack of industry and academic consensus around calculating emissions (particularly non-CO_2) prevent it progressing this work as this is likely to be an iterative process as more evidence and more accurate data becomes available.

Standardisation and Consistency

8.25 It was emphasised by some respondents that it was important that there was a standard methodology and presentation format across aviation.

8.26 It was suggested that the CAA should publish a comprehensive and clear content and design guide for information presentation for what is and is not accessible for airlines/other websites to provide with clear examples given. Respondents suggested it was important to provide guidance to ensure easy readability and understanding.

8.27 Some respondents considered that environmental information needs to be understandable at a glance and that a traffic light or graded system like that used for domestic appliance labelling could enable that.

8.28 Some respondents proposed that there should be an independent third party to publish and verify methodologies.

8.29 It was suggested that we should test proposals with focus groups or undertake social research before implementation. The CAA's Consumer Panel suggested that additional consumer research was needed particularly on the format of presentation.

Consumer Education and Engagement

8.30 Some respondents suggested that we should conduct awareness campaigns to educate consumers on choosing lower-emitting flights and understanding flight-specific emissions estimates.

8.31 It was mentioned that we need to consider consumer needs, behaviour, and preferences in designing strategies. Some respondents suggested that the DfT and the CAA should develop a working group (including industry representatives) on environmental information with the long-term ambition of delivering consumer environmental information.

8.32 Some respondents suggested that we involve citizen panels or consumer advocacy groups in advising on the CAA's strategy.

8.33 It was mentioned that we should nudge people towards environmentally friendly choices and better engage and support them through the transition to Net Zero.[40]

Regulatory Measures

8.34 It was suggested that the sale or promotion of offsets at the time of booking should be banned and that any claims that offsetting enables carbon neutral flights are intrinsically misleading.[41]

8.35 Some respondents expressed a strong preference for a frequent flyer tax or levy.

8.36 It was recommended that there should be fines or penalties for airlines that fail to cooperate with any emissions labelling requirements. Some respondents considered that the CAA needed new powers and resources to enforce the provision of environmental information.

Collaboration and Partnership

8.37 Some respondents recommended that we should align with global standards, such as IATA RP1726 and EASA, and collaborate with industry stakeholders.

8.38 It was suggested that we should encourage airlines to cooperate and provide accurate data by publicising poor performance in the provision of environmental information.

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[40] https://www.which.co.uk/policy-and-insight/article/supporting-consumers-in-the-transition-to-net-zero-axvRs4N3eU7d

[41] https://www.greenpeace.org.uk/news/airlines-carbon-offsets-solution-climate-change-wrong/

Long-Term Goals and Net Zero

8.39 Some respondents were keen that the CAA should prioritise the objective of reaching net zero emissions and support was provided for the CAA's increasing focus on supporting aviation decarbonisation measures.

8.40 Some respondents considered that we should publish an ambitious roadmap to achieve high standards of emissions labelling and some respondents suggested that we should focus on honesty, transparency, and continuous improvement.

Avoiding Negative Consequences

8.41 It was suggested that we mitigate potential negative consequences for airline profitability by allowing diversification into cleaner forms of transport.

8.42 Some respondents suggested that we ensure proposals are tested with behavioural change and public engagement experts to anticipate unintended negative consequences.

Question 19: Is there anything else that you think we should be aware of in relation to the provision of consumer environmental information, beyond the areas mentioned above?

Developing a Kitemark

8.43 It was suggested that the CAA should engage with the BSI to develop a kitemark to provide assurance to consumers that the information they see is vetted and trustworthy.

Broadening the Scope

8.44 Some respondents considered that to reduce aviation emissions, consumers should stop flying entirely, and that the CAA should reduce emissions wherever possible. Responses also suggested reducing the cost of SAF and developing regulation for both SAF and new technologies. Some respondents suggested the inclusion of airport CO_2 emissions as an intrinsic part of the journey and some respondents highlighted the impact of aviation on climate change and biodiversity.

8.45 It was noted that some cities have instituted a ban on fossil-fuel advertisements on publicly owned land and suggested that similar measures were needed for aviation-based fossil fuel advertisements in the UK.[42]

8.46 It was suggested that we consider any indirect emissions reductions from SAF and offsetting and present them separately.

[42] https://www.badverts.org/latest/stockholm-aims-for-a-fossil-ad-ban

8.47 Some respondents were keen that when transport modes were compared, there would be a consideration of land use and infrastructure, including annual rail and road maintenance with an example given of annual rail maintenance leading to double the direct emissions of rail services.[43]

8.48 Respondents who mentioned noise, were keen that we should consider including information on the impact of aviation noise.

Scope 3 reporting

8.49 Some respondents suggested that we should advocate for airline-specific data to be incorporated in Scope 3[44] reporting to improve accuracy and encourage efficient choices.

Innovation and New Technologies

8.50 Some respondents encouraged us to ensure that information about emissions from innovative technologies and aircraft are included as these technologies develop further.

8.51 Other respondents were keen that any best practice guidance produced by the CAA on how to provide information should be flexible enough to allow continued innovation in the presentation of consumer environmental information as this in the view of respondents would benefit consumers.

[43] https://decarbon8.org.uk/EmbodiedEmissions-rail/

[44] Scope 1 emissions are the direct emissions from owned or controlled sources, Scope 2 emissions are the indirect emissions from the generation of purchased energy, Scope 3 emissions are all indirect emissions, not included in Scope 2, that occur in the value chain of the reporting company – source: https://www.gov.uk/government/calls-for-evidence/uk-greenhouse-gas-emissions-reporting-scope-3-emissions