



AEF Deadline 6 representation on post-hearing issues, and comments on information received at Deadline 5, relating to climate and greenhouse gas emissions, specifically the applicant's forecast CO₂ emissions and Jet Zero modelling

Introduction

1. During the ISH on climate and in response to written representations made by AEF, GAL has asserted and relied upon the contention that the modelling undertaken for Jet Zero takes account of the airport's growth and therefore the emissions from the proposed expansion. The Jet Zero Strategy Dataset states that the available capacity of Gatwick Airport assumed in the Jet Zero modelling is 386,000 ATMs by 2050, which is in line with the proposed growth at the airport, but no information is provided in that Dataset or in Jet Zero on the level of runway utilisation (as distinct from the available capacity) or the associated emissions.
2. Accordingly, AEF asked for information through an Environmental Information Request to the Department for Transport (DfT). This has confirmed that the revised modelling for Jet Zero One Year On (JZOYO) shows a significantly lower level of capacity utilisation at Gatwick Airport when compared to its available capacity: in 2050, DfT modelling forecasts that the airport will handle 263,012 ATMs with traffic having peaked at 298,395 ATMs in 2030. Consequently, the level of emissions assumed to come from Gatwick Airport in the JZOYO modelling, 1,472,924 tCO₂e in 2050, is significantly lower than the number provided in GAL's assessment.

Summary Conclusions

3. Two points can be made in relation to the information obtained JZOYO modelling:
 - Firstly, the DfT's demand and passenger allocation model assumes that while Gatwick Airport has available capacity with the current project to accommodate traffic up to 386,000 ATMs, the projected demand for air travel is met largely by the availability of capacity elsewhere in the UK airport system. Consequently, Gatwick Airport is forecast to handle fewer ATMs in 2050 than the 280,681 ATMs it handled in 2019 using its one existing runway.
 - Given the lower traffic forecasts for Gatwick, JZOYO forecasts approximately half the emissions estimated by GAL for 2050. Consequently, GAL cannot rely on Jet Zero or JZOYO as addressing or managing the climate impact from the forecast higher level of emissions associated with GAL's traffic predictions in this DCO process.

Details

4. In its environmental statement, GAL states that the emissions associated with the project will be 2.964tCO₂e in 2050 using assumptions that are in line with those used in the Jet Zero Strategy. However, from the information published in the Jet Zero modelling, it is not possible to determine whether the DfT assumes a similar level of emissions from the airport's operations.
5. As a result, in March 2024, AEF submitted a request to the Department for Transport requesting any information on CO₂ projections for Gatwick Airport under the high ambition trajectory for 2030, 2038, 2040, 2047 and 2050 for the Jet Zero Strategy and the Jet Zero Strategy One Year On. This request was made as an Environmental Information Request and assigned the number EIR-00014035. The DfT response dated 24/04/24 is reproduced in full together with the associated notes and caveats in Appendix 1. These do not affect the conclusions set out above.
6. The table below shows the modelled CO₂e emissions for the high ambition scenario in the Jet Zero strategy and Jet Zero One Year On.

Jet Zero Strategy High Ambition Scenario CO₂e emissions

Figures in tonnes

	2030	2038	2040	2047	2050
Gatwick	5,218,842	3,276,785	2,851,242	1,964,471	1,792,499

Jet Zero Strategy One Year On High Ambition Scenario CO₂e emissions

Figures in tonnes

	2030	2038	2040	2047	2050
Gatwick	4,757,948	2,595,581	2,030,652	1,594,764	1,472,924

7. In response to a further AEF request for clarification on the traffic levels associated with the above results, DfT provided a second data set showing the forecast number of Air Traffic Movements (ATMs) using Gatwick Airport as shown in the table below:

Jet Zero Strategy High Ambition Scenario CO₂e ATMs

	2030	2038	2040	2047	2050
Gatwick	322,730	285,356	274,328	328,860	378,428

Jet Zero Strategy One Year On High Ambition Scenario ATMs

	2030	2038	2040	2047	2050
Gatwick	298,395	232,147	218,127	245,245	263,012

8. While Jet Zero assumes the available capacity at Gatwick to be 386,000 ATMs in 2050, the modelling in One Year On assumes a much lower level of runway utilisation. The 263,012 ATMs forecast to use the airport in 2050 takes account of the underlying demand for travel, aircraft size, load factors, available capacity (for example, the potential for Heathrow to grow to 740,000 ATMs in 2050), and alternative routes.

Appendix 1 DfT response to EIR 00014035 with notes and caveats


24/04/2024
Department
for Transport



Department for Transport
Great Minster House
33 Horseferry Road
London
SW1P 4DR

Tel: 0300 330 3000

Web Site: www.gov.uk/dft

Our Ref: 00014035

Dear 

Environmental Information Regulations request – 00014035

Thank you for your information request dated 08/03/2024.

You requested the CO2 projections for Gatwick Airport under the high ambition trajectory for 2030, 2038, 2040, 2047 and 2050 for the Jet Zero Strategy and the Jet Zero Strategy one year on.

The data requested can be found in the attached spreadsheet alongside some relevant caveats.

Appeals procedure

If you are dissatisfied with the way we have responded to or handled your request, you have the right to ask for an internal review. These should be submitted within two calendar months of the date of this letter and addressed to the FOI Advice Team at FOI-Advice-Team-DFT@dft.gov.uk.

Please remember to quote the reference number above in any future communications.

If you ask for an internal review and are still not content with the outcome, you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted via their online form: <https://ico.org.uk/make-a-complaint/official-information-concerns-report/official-information-concern/>

Yours sincerely,



Reproduction of the attached spreadsheet

Jet Zero Strategy High Ambition Scenario CO2e emissions

Figures in tonnes

	2030	2038	2040	2047	2050
Gatwick	5,218,842	3,276,785	2,851,242	1,964,471	1,792,499

Jet Zero Strategy One Year On High Ambition Scenario CO2e emissions

Figures in tonnes

	2030	2038	2040	2047	2050
Gatwick	4,757,948	2,595,581	2,030,652	1,594,764	1,472,924

Airport Jet Zero Strategy dataset

Date: Apr-24

This dataset includes:

- CO2 emissions (tonnes) for Gatwick Airport in line with the High Ambition scenario presented in the Jet Zero Strategy and the Jet Zero Strategy One Year On document
- Caveats that must be considered when viewing these forecasted figures

Modelled Forecast Caveats:

- It should be noted that there is uncertainty when considering results at the level of individual airports, especially those subject to high levels of competition. Here local short-term, often commercial, drivers can have significant impact. forecasts for smaller airports also have greater uncertainty and volatility, with the addition or removal of routes having a larger proportional impact on overall passenger numbers.

- Due to the way that the aviation model works, summing the modelled emissions from each airport results in lower total emissions than the total national emissions shown in the scenarios themselves. This is because of modelling adjustments that are made to the national emissions figures. A modelling residual is added to the national modelled emissions totals to better align modelled emissions with national aviation bunker emissions data from the base year (2016) and this cannot readily be allocated to specific airports or routes.

- The capacity assumptions required by the model do not pre-judge the outcome of any future planning applications, including decisions taken by Ministers, and are not a prediction of what the Department of Transport thinks will happen with future capacity expansion. However, specific assumptions must be made for the model to operate and these act as a reasonable upper bound of possible future airport capacity and associated UK aviation emissions and are consistent with current planning applications. The purpose of this modelling is limited to providing a consistent basis to test the potential effectiveness of measures to meet net zero.

-This data is based on the assumptions that SAF delivers around 70% emission savings based on average lifecycle estimates. This is consistent with the analysis presented in both Jet Zero consultations. In the Jet Zero Strategy, we also presented the results assuming SAF delivers 100% emission savings, based on GHG accounting rules, however these figures are not provided in this dataset.

-The department's Aviation Model uses airport level constrained forecasts for passengers and ATMs to calculate national level emissions. Airport level forecasts are an essential step in calculating these national level forecasts. Emission forecasts were calibrated against the most recently available data (2019) at the time of publication at both a national and airport level. These airport level estimates should nevertheless be treated with caution, as the emphasis was national level forecasts when undergoing model calibration prior to publishing these forecasts. This approach was taken because local competition between airports for routes has little material effect on national level emissions, which were the focus of this set of forecasts given their primary purpose was to support the Jet Zero Strategy. Airport level forecasts are therefore considered to have greater uncertainty and volatility, with the addition or removal of routes with competing airports.

Note:

This data should be viewed alongside all caveats outlined in the Jet Zero Strategy

END

Email from DfT to AEF, dated 09/05/24, providing additional information relating to a further request from AEF to clarify the number of ATMs associated with the emissions forecasts

“Apologies for the delay in responding but took some time to gather (and approve) additional data to respond to your query.

The ATM capacity is an assumption on the top-level limit for aircraft movements at Gatwick that could operate. When the limit is reached the Aviation model applies constraints and causes passengers to shift to other airports in an iterative process. Airports will not always be operating at their capacity and passenger/ATM allocation depends on the interactions between underlying demand, airports available and constraints at airports. You are correct that the capacity assumptions are the same in the data provided as in the JetZero Strategy.

However in order to understand the ATMs that have produced the emissions you would need the forecasts ATMs from the corresponding CO2 data (which I have attached). So for example Gatwick operating in 2050 is forecast to emit 1,472,924tCO2e from 263,012 ATMs

Hope this answers your query.

Thanks”

Reproduction of the spreadsheet attached to the DfT email sent on 09/05/24

Jet Zero Strategy High Ambition Scenario CO2e ATMs

	2030	2038	2040	2047	2050
Gatwick	322,730	285,356	274,328	328,860	378,428

Jet Zero Strategy One Year On High Ambition Scenario ATMs

	2030	2038	2040	2047	2050
Gatwick	298,395	232,147	218,127	245,245	263,012

Airport Jet Zero Strategy dataset

Date:	Apr-24												
	JZ JZOYO Gatwick ATMs.xlsx												
This dataset includes:	<ul style="list-style-type: none"> - ATMs for Gatwick Airport in line with the High Ambition scenario presented in the Jet Zero Strategy and the Jet Zero Strategy One Year On document - Caveats that must be considered when viewing these forecasted figures - This is a follow up request to EIR 14035 												
Modelled Forecast Caveats:	<p>- It should be noted that there is uncertainty when considering results at the level of individual airports, especially those subject to high levels of competition. Here local short-term, often commercial, drivers can have significant impact. forecasts for smaller airports also have greater uncertainty and volatility, with the addition or removal of routes having a larger proportional impact on overall passenger numbers.</p> <p>- The capacity assumptions required by the model do not pre-judge the outcome of any future planning applications, including decisions taken by Ministers, and are not a prediction of what the Department of Transport thinks will happen with future capacity expansion. However, specific assumptions must be made for the model to operate and these act as a reasonable upper bound of possible future airport capacity and associated UK aviation emissions and are consistent with current planning applications. The purpose of this modelling is limited to providing a consistent basis to test the potential effectiveness of measures to meet net zero.</p> <p>-The department's Aviation Model uses airport level constrained forecasts for passengers and ATMs to calculate national level emissions. Airport level forecasts are an essential step in calculating these national level forecasts. Emission forecasts were calibrated against the most recently available data (2019) at the time of publication at both a national and airport level. These airport level estimates should nevertheless be treated with caution, as the emphasis was national level forecasts when undergoing model calibration prior to publishing these forecasts. This approach was taken because local competition between airports for routes has little material effect on national level emissions, which were the focus of this set of forecasts given their primary purpose was to support the Jet Zero Strategy. Airport level forecasts are therefore considered to have greater uncertainty and volatility, with the addition or removal of routes with competing airports.</p>												
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