CAA Environmental Assessment

Title of airspace change proposal	OSEP 11 (CLN)
Change sponsor	NATS
Project reference	ACP-2021-061
Account Manager	[redacted]
Case study commencement date	8 October 24
Case study report as at	11 November 2024

Instructions

In providing a response for each question, please ensure that the 'status' column is completed using the following options:

- YES
- NO
- PARTIALLY
- N/A

To aid the SARG Lead it may be useful that each question is also highlighted accordingly to illustrate what is:

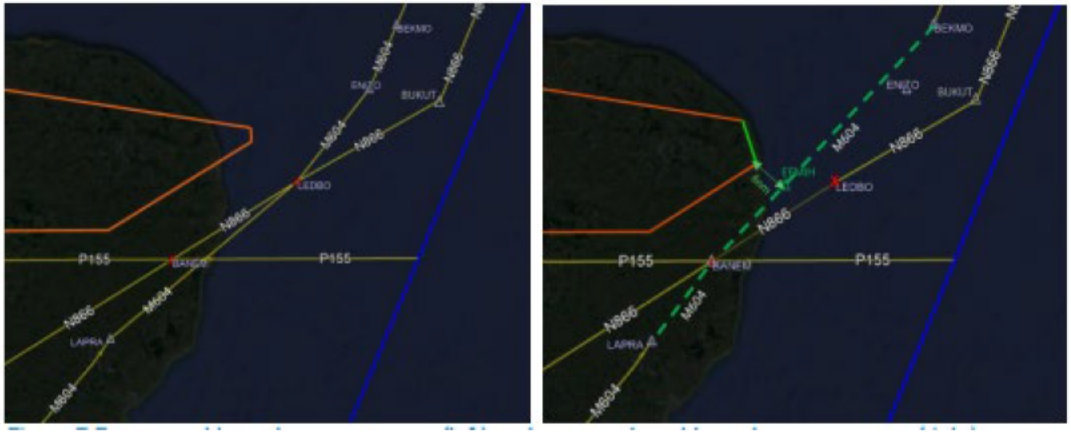
resolved YES not resolved PARTIALLY not compliant NO

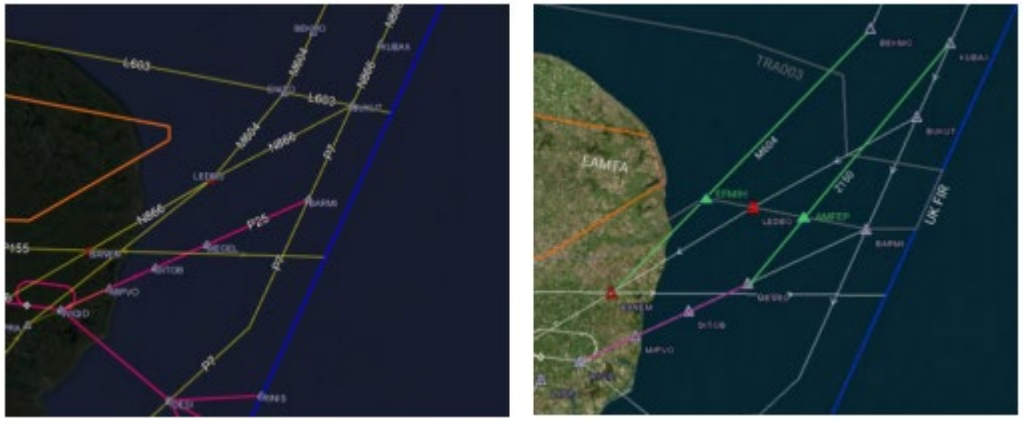
1. Introduction

ACP-2021-061 is part of the NATS Operational Service Enhancement Project (OSEP), to implement a series of small-scale changes across NERL airspace in accordance with the Airspace Modernisation Strategy. The objective is to improve connectivity between the UK Air Traffic Services (ATS) route network and adjacent Flight Information Region (FIR) boundaries which is intended to improve fuel efficiency and reduce greenhouse gas emissions. The airspace change is limited to routes above flight level (FL) 175 and comprises two components:
1) Optimise East Anglia Military Training Area and optimise adjacent route structures (M604/N866)
2) Optimise westbound route structure at KOLAG (EHAM departures)

The sponsor for the ACP is NATS, it has been assessed by the CAA as a Level 3 under CAP 1616h. This environmental assessment has been undertaken with reference to the following documents submitted at Stage 4:
OSEP11_Stage4_ACPv1.1.pdf
Engagement Evidence v2.0.pdf

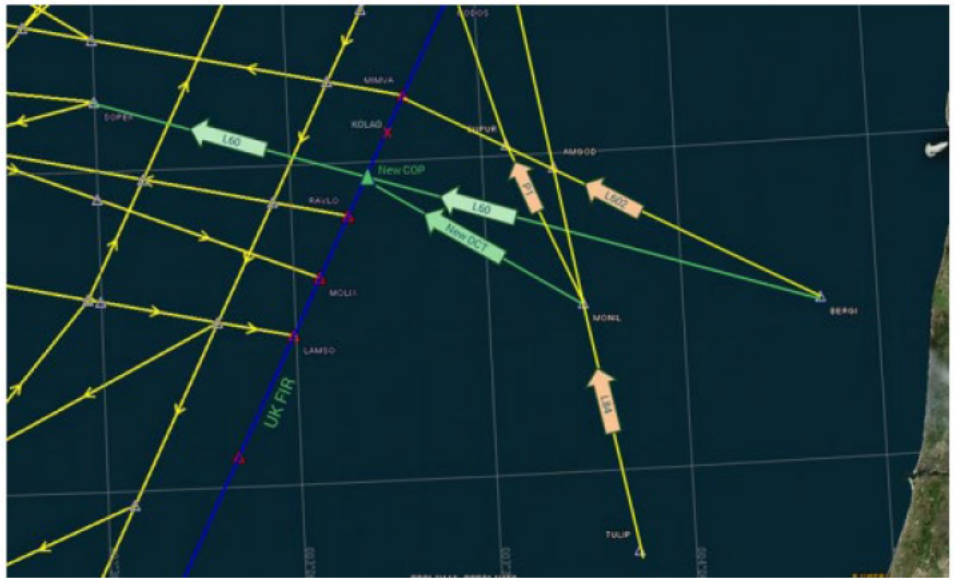
There are 2 key drivers for the changes within the proposal:
1) Realignment of East Anglia Military Training Area (EAMTA): As part of a separate airspace change (OSEP 8 project) NERL and the Ministry of Defence (MoD) implemented a realignment of the EAMTA area. This realignment was implemented in February 2024 through a Letter of Agreement (LoA) amendment, and it facilitates more efficient ATS routings in this region. This ACP seeks to make this permanent in the UK Aeronautical Information Publication (AIP), which enables fuel and CO_2 efficiencies through the proposed route revisions.
2) Airline feedback: KLM airline requested NERL and Luchtverkeersleiding Nederland (LVNL), the Netherlands air traffic control agency, review the current routing westbound from Amsterdam, which could enable flight plannable fuel and CO_2 savings.

2. Nature of the Proposed Change		Status
2.1	Is it clear how the proposed change will operate, and therefore what the likely environmental impacts will be?	Partial
	The ACP seeks to formalise revision of the lateral boundaries of the EAMTA in the UK AIP, facilitating the realignment of adjacent ATS routes to enable flight plannable CO_2e benefits for affected traffic. The proposed published routes replicate current tactical flight behaviours when the extant EAMTA is not active. See comparison of existing and proposed routes below: *Figure 1: Extant northbound route structure (left) and proposed northbound route structure (right).*  *Figure 2: Extant southbound route structure (left) and proposed southbound route structure (right).*	



In respect of the second component the westbound routing from Amsterdam, the ACP proposes relocation of the Change Over Point (COP) (currently KOLAG) and realignment of the connecting routes, to enable flight plannable CO_2e benefits. The proposed published routes replicate current tactical flight behaviours and are predicted to reduce track mileage by approximately 1NM in the flight plannable route from BERGI-SOPEK. The sponsor has stated that this change would enable flight plannable CO_2e benefits for approx. 16,000 flights per annum. See Figure 3 below:

Figure 3: Proposed revision to westbound route structure at KOLAG.



3. Secretary of State Call-in Noise Criterion		Status
3.1	Is the proposal likely to meet the Secretary of State's criterion for call-in on noise impacts? If yes, has the additional assessment on that criterion been undertaken and what are the results? If no, what is the rationale for that conclusion? *The criterion, as set out in the DfT's Air Navigation Guidance (2017)[1] is that the proposed airspace change could lead to a change in noise distribution resulting in a 10,000 net increase in the number of people subjected to a noise level of at least 54 dB[2] as well as having an identified adverse impact on health and quality of life.[3]*	N/A

[1] The DfT's call-in criteria are set out in The Civil Aviation Authority (Air Navigation) Directions 2017, Section 6, paragraph (5). These Directions are replicated in Annex D of the DfT's Air Navigation Guidance 2017,

[2] LAeq 16h noise exposure.

[3] The assessment of the numbers of people affected and the associated adverse impacts on health and quality of life of the airspace change proposal should be carried out by the sponsor in accordance with the requirements set out in the DfT's Guidance.

	This ACP does not impact airspace below 7,000 feet above mean sea level (AMSL) over an inhabited area. It is therefore considered unlikely that the proposal would affect noise exposure above 54 dB $L_{Aeq,16h}$ or have an identified adverse impact on health and quality of life.

4. Statement of Need		Status
4.1	Does the Statement of Need include any environmental factors?	Yes
	This ACP seeks to improve connectivity between the UK ATS route network and adjacent FIR boundaries by introducing new and/or amended ATS routes, waypoints and/or COPs. This will enhance connectivity whilst improving fuel efficiency and reducing greenhouse gas emissions.	

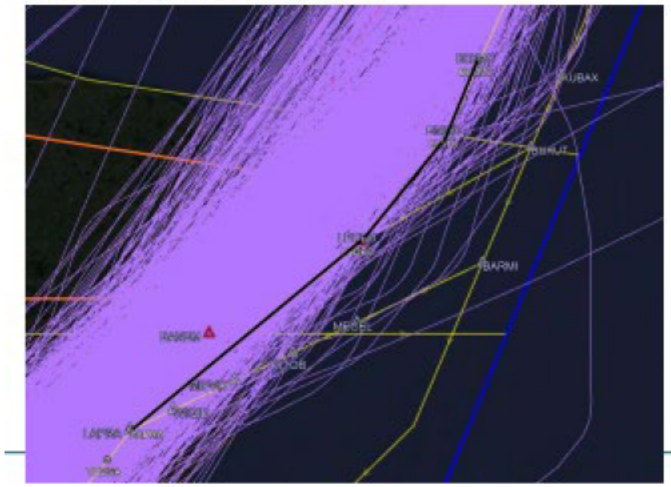
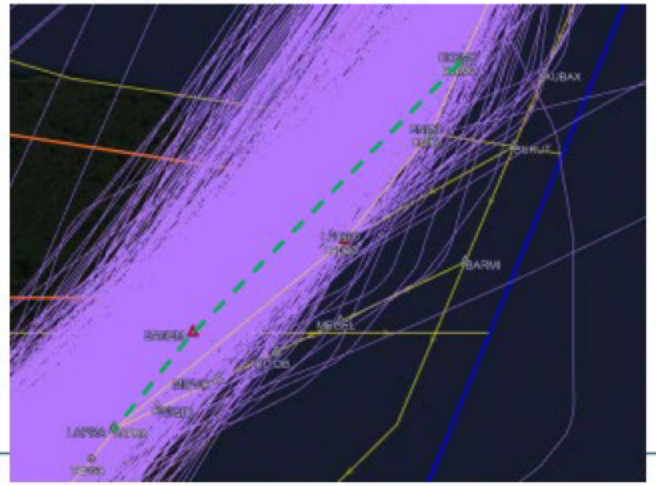
5. Design Principles		Status
5.1	Does the final set of Design Principles include any environmental objectives?	Yes
	The ACP includes the Mandatory Design Principle, '*the airspace change proposal should deliver the Government's key environmental objectives with respect to air navigation as set out in the Government's Air Navigation Guidance 2017'*. The MDP was 'mapped' across from the sponsor's initial Stage 1 Design Principle, '*the proposed route amendments will facilitate the reduction of CO2 emissions per flight'*, because the ACP was transferred to CAP 1616h from CAP 1616 version 4. The amendment to the Stage 1 DP is acceptable as the MDP encompasses the Government's key environmental objective with regards to CO_2 emissions. The sponsor has also retained a bespoke DP: economic (fuel) – *'the proposed route amendments will enable reduced fuel burn per flight'*, which also relates to CO_2e emissions. The original prioritisation of the Stage 1 DPs has been removed to align with the new categorisation implicit in the CAP 1616 version 5 guidance.	
5.2	Does the proposal explain how and to what extent the final airspace design achieves any environmental Design Principles?	Yes
	The sponsor's DP evaluation states that the proposed change would enable flight plannable CO_2e savings from reduced flight plannable track mileage. The sponsor also states that there would be no impacts on aircraft noise or local air quality emissions as all changes are above FL 175. It should be noted that the DP evaluation refers to reduction in **flight plannable** track mileage. This reflects that the quantification of the reduction in track mileage is based on a comparison of current with proposed published routes. The ACP proposes that the new routes are based on replication of current tactical flight behaviours, and therefore it is likely that the anticipated reduction in track mileage and CO_2e emissions may be overstated.	

5.3	Were there any proposed environmental Design Principles that were rejected from the final set? If so, is the rationale for rejecting those Principles reasonable?	No
	The original DPs from Stage 1 were mapped across at Stage 2 'Develop and Assess' to meet the revised DPs required under CAP 1616 v5.	
5.4	Were there any design options during the airspace change process that might have better met the environmental Design Principles than the final proposal as submitted to the CAA? If so, is the rationale for rejecting those options set out?	No
	Only a single design option was developed for the two components of the ACP.	

6. Options Appraisal		**Status**
6.1	Have environmental impacts been adequately reflected and assessed in the Options Appraisal?	Yes
	Environmental impacts associated with this ACP relate to greenhouse gas emissions only as all proposed changes are above FL 175. There is also no requirement for sponsors of Level 3 ACPs to conduct options appraisals.	
6.2	Is the final proposal as submitted to the CAA the airspace design option that also produced the best environmental impacts as assessed by the Options Appraisal? If not, does the rationale for selecting the preferred option adequately explain this choice?	N/A
	No options appraisal is required for Level 3 ACPs. The sponsor proposed a single option for the two identified components of the ACP.	

7. Noise [for Level 1 and Level M1 airspace change proposals]		**Status**
7.1	Has the noise impact been adequately assessed and presented in both the consultation material and the final submission to the CAA, taking account of scalability and proportionality?	N/A
7.2	If a noise assessment has not been undertaken by the sponsor, has this decision been adequately explained and evidenced in both the consultation material and the final submission to the CAA, and is the rationale reasonable?	N/A
7.3	Summary of anticipated noise impacts from the final proposed airspace change.	
	This ACP is not anticipated to introduce any changes to flight behaviour below 7,000 ft and therefore there is unlikely to be an identified adverse impact on health and quality of life because of noise impacts.	

8. CO_2 Emissions		Status
8.1	Has the impact on CO_2 emissions been adequately assessed and presented in both the consultation material and the final submission to the CAA, taking account of scalability and proportionality?	Yes
	The sponsor has provided a quantitative assessment of CO_2e emissions based on the anticipated change to track mileage comparing the differences in current and proposed published routes. Based on the modelling methodology in CAP 1616i for calculation of greenhouse gas emissions, the sponsor has not met the requirements of paragraph 6.4: *'When calculating changes to greenhouse gas emissions, change sponsors must show the estimated actual change in emissions rather than the theoretical change. Specifically, this means that the assessment must be based on anticipated actual changes to aircraft behaviour (for example, reduced miles flown, improved climb profile flown, improved descent profile flown) rather than simply comparing the differences in published flight procedures (for example, changes to flight-planned routes that do not reflect current or expected actual routeings).'* The sponsor has not provided details of the assessment methodology for calculation of CO_2e emissions associated with the ACP. However, as CAP1616h only requires a qualitative assessment of the impacts of the design options the absence of the CO_2e emission calculation method is accepted. The assessment outputs have been presented in the consultation material (Engagement Evidence v2.0) at Stage 3 and Stage 4 but the calculated CO_2e emissions have not been reproduced in the Stage 4 Update and Submit v1.1 document.	
8.2	If an assessment of the impact on CO_2 emissions has not been undertaken by the sponsor, has this decision been adequately explained and evidenced in both the consultation material and the final submission to the CAA, and is the rationale reasonable?	N/A
	A quantitative assessment of impact on CO_{2e} emissions has been undertaken.	
8.3	Summary of anticipated impact on CO_2 emissions from the final proposed airspace change.	
	The sponsor has submitted calculated changes in track miles and the resultant change in CO_2e emissions for the optimised northbound and southbound route structures (FL 245+) and for the optimised westbound route structure (KOLAG). The sponsor has calculated that the realignment of the East Anglia Military Training Area could facilitate a combined annual CO_2e reduction of 661 tonnes and a reduction of 369 tonnes per annum CO_2e associated with the changes to the westbound route structure (KOLAG) which is not dependant on changes to EAMTA.	

	The predicted CO_{2e} emissions have been calculated based on the reduction in track mileage comparing the current and proposed published routes. However, flight planned data does not capture all the lateral variation in tracks which may include shortcuts or track extensions. As the ACP proposes that the proposed published routes are based on replication of current tactical flight behaviours, it is likely that the anticipated reduction in CO_2e emissions may be overstated. The following proposed route diagrams (presented in the ACP) illustrate the reason why calculated CO_2e emissions are likely to have been over-estimated. The actual trajectories flown (purple lines) more closely replicate the proposed new routing than the current published routes which have been used to calculate the difference in track miles. Comparison of the actual trajectories and proposed routings would indicate less difference in track miles and a resultant smaller change in CO_2e emissions. Evaluation of the change in 'actual' track mileage and CO_2e emissions will be required through provision and analysis of pre and post ACP implementation flight trajectory data as part of the Stage 7 Post Implementation Review, if approved. **BASELINE** Current routing and current traffic flow  **OPTION** Proposed new routing and current traffic flow  Purple lines show actual trajectories flown Oct-Nov 2023

9. Local Air Quality [for Level 1 and Level M1 airspace change proposals]		**Status**
9.1	Has the impact on Local Air Quality been adequately assessed and presented in both the consultation material and the final submission to the CAA, taking account of scalability and proportionality?	N/A

9.2	If an assessment of the impact on Local Air Quality has not been undertaken by the sponsor, has this decision been adequately explained and evidenced in both the consultation material and the final submission to the CAA, and is the rationale reasonable?	N/A
9.3	Summary of anticipated impact on Local Air Quality from the final proposed airspace change.	
	No anticipated local air quality impacts as this ACP is not anticipated to impact flight behaviour or traffic patterns below 7,000 ft.	

10. Tranquillity [for Level 1 and Level M1 airspace change proposals]		**Status**
10.1	With specific reference to Areas of Outstanding Natural Beauty and National Parks - Has the impact on tranquillity been adequately considered and presented in both the consultation material and the final submission to the CAA, taking account of scalability and proportionality?	N/A
10.2	If consideration of the impact on tranquillity has not been undertaken by the sponsor, has this decision been adequately explained and evidenced in both the consultation material and the final submission to the CAA, and is the rationale reasonable?	N/A
10.3	Summary of anticipated impact on tranquillity from the final proposed airspace change.	
	No anticipated impacts on tranquillity as this ACP is not anticipated to impact flight behaviour or traffic patterns below 7,000 ft.	

11. Biodiversity [for Level 1 and Level M1 airspace change proposals]		**Status**
11.1	Has the impact on biodiversity been adequately assessed and presented in both the consultation material and the final submission to the CAA, taking account of scalability and proportionality?	N/A
11.2	If assessment of the impact on biodiversity has not been undertaken by the sponsor, has this decision been adequately explained and evidenced in both the consultation material and the final submission to the CAA, and is the rationale reasonable?	N/A

11.3	Summary of anticipated impact on biodiversity from the final proposed airspace change.
	No anticipated impacts on biodiversity as this ACP is not anticipated to impact flight behaviour or traffic patterns below 7,000 ft.

12. Traffic Forecasts		**Status**
12.1	Have traffic forecasts been provided, are they reasonable, and have these been used to reflect the anticipated environmental impacts of the proposal?	No
	As the sponsor undertook a high-level assessment of the impacts on track mileage and CO2e emissions, a forecast was not used to inform the environmental impacts of the ACP over a longer term appraisal period.	

13. Consultation		**Status**
13.1	Has the sponsor taken account of any environmental factors (noise, CO_2 emissions, Local Air Quality, tranquillity or biodiversity) raised by consultees or has evidence been provided to indicate why this has not been possible?	Yes
	No environmental factors were raised by consultees. One aviation stakeholder provided fuel data in response to a specific request from the sponsor regarding the proposed westbound (KOLAG) routing, but no further related comments were raised.	
13.2	Has the sponsor taken account of any consultation response submitted by ICCAN? If so, what are the outcomes?	N/A
	The Independent Commission on Civil Aviation Noise closed in September 2021.	

14. Public Evidence Session (if held)		**Status**
14.1	If a Public Evidence Session has been held, was any new evidence on potential environmental impacts presented?	N/A
	No public evidence session was held for this ACP.	
14.2	If so, was the new evidence relevant and material to the CAA's consideration of the environmental impacts of the submitted airspace change proposal?	N/A
	No public evidence session was held for this ACP.	

15. Compliance with policy and guidance from Government, ICCAN or the CAA		Status
15.1	Has the sponsor satisfied all relevant policy and/or guidance from either the Government, ICCAN or the CAA, with regards to environmental impacts of the proposed airspace change?	Yes
	The sponsor has not met the requirements of paragraph 6.4 in CAP 1616i. However, as per CAP1616h, only a qualitative assessment of the impacts of the design options is required. Evaluation of the change in 'actual' track mileage and CO_2e emissions will be required through provision and analysis of pre and post ACP implementation flight trajectory data as part of the Stage 7 Post Implementation Review, if approved.	
15.2	Has the sponsor adequately considered the DfT's Altitude-Based Priorities[4]?	Yes
	All proposed changes are above FL 175 and therefore the sponsor is only required to consider CO_2 emissions.	

16. Other aspects		Status
16.1	Are there any other aspects of the airspace change proposal that have not already been addressed in this report but that may have a bearing on the environmental impact?	No
	No anticipated impacts on General Aviation activity as all changes above FL 175.	

17. Recommendations/Conditions/PIR Data Requirements		Status
17.1	Are there any Recommendations which the change sponsor **should try** to address either before or after implementation (if approved)? If yes, please list them below.	No
17.2	Are there any Condition(s) which the change sponsor **must fulfil** either before or after implementation (if approved)? If yes, please list them below.	No
17.3	Are there any specific requirements in terms of the data to be collected by the change sponsor for the Post	Yes

[4] Paragraph 3.3, DfT's Air Navigation Guidance 2017

	Implementation Review (if approved)? If yes, please list them below.
	Yes, the sponsor must collect the following data and perform the subsequent analysis for the PIR: • The sponsor must use actual traffic movement numbers and trajectory data to calculate actual track mileage and CO_2e emissions for the first year of implementation of the ACP. • The sponsor must use actual traffic movement numbers and flight-planned trajectory data to calculate flight planned track mileage and CO_2e emissions for the first year of implementation of the ACP. • The sponsor must provide full details of the methodology and assumptions used to calculate track mileage and CO_2e emissions for the actual and planned calculations.

18. Summary of Assessment of Environmental Impacts & Conclusions

This ACP proposes to improve connectivity between the UK Air Traffic Services (ATS) route network and adjacent Flight Information Region (FIR) boundaries which is intended to improve fuel efficiency and reduce greenhouse gas emissions. The airspace change is limited to routes above flight level (FL) 175 and comprises two components:
1) Optimise East Anglia Military Training Area and optimise adjacent route structures (M604/N866)
2) Optimise westbound route structure at KOLAG (EHAM departures)

The proposal has been scaled as a Level 3 ACP, therefore, in accordance with the Department for Transport's (DfT) altitude-based priorities, the environmental priority is to reduce aircraft CO_2 emissions in support of the objective to ensure that the aviation sector makes a significant and cost-effective contribution towards reducing global emissions. Due to this being a Level 3 ACP, there is no requirement for the sponsor to assess other environmental aspects, including impacts on local air quality, noise, tranquillity, and biodiversity.

The sponsor's environmental assessment concludes a net reduction in track mileage within UK airspace for aircraft opting to flight-plan using the routes proposed by this ACP. This is likely to result in a positive impact to CO_2 emissions however, it is not possible to validate the scale of change as the use of flight planned data for comparison of pre and post implementation track mileage does not capture lateral variation in tracks due to vectoring. Data to evaluate the impact on the reduction in CO_2e emissions has been requested as part of the Post Implementation Review.

Environmental assessment sign-off	Name	Signature	Date
Environmental assessment completed by Airspace Regulator (Environment)	[redacted]	[redacted]	19/11/2024
Environmental assessment conclusions approved by Principal Airspace Regulator	[redacted]	[redacted]	04/12/2024