CAA Environmental Assessment

Title of airspace change proposal	London Airspace Modernisation Programme 2 Deployment 1.2 (LAMP 2 D1.1)
Change sponsor	NATS Ltd
Project reference	ACP-2017-70
Account Manager	[redacted]

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

This CAA environmental assessment and statement describes the environmental factors relevant to NATS Ltd.'s ('the sponsor') Airspace Change Proposal (ACP) for the introduction of London Airspace Modernisation Programme 2 Deployment 1.2 (LAMP 2 D1.1) in the London Upper Flight Information Region (UIR) over southwest of England and most of Wales between 7,000 and 24,500 ft. This ACP has been scaled as a Level 2A change as it alters aircraft tracks below 20,000 ft. (above mean sea level) but at or above 7,000 ft. (above mean sea level).

Concurrently, the sponsor is also progressing ACP-2019-12: Free Route Airspace Deployment 2 (FRA 2) that impacts the airspace above 24,500 ft. and covering the same geographic area. These two ACPs are therefore interdependent and are together referred to as the Future Airspace Implementation (FASI) West Airspace Deployment ('West'). The anticipated environmental impact has been estimated for the West airspace concept as a whole and then attributed individually to the two ACPs based on the respective proportion of flight times spent in each airspace volume.

The lower airspace between FL70–FL245 routinely accommodates flights arriving to and departing from Cardiff Airport, Exeter Airport and Bristol Airport. The airspace is also used by aircraft arriving at and departing from airports outside the area, including all London airports, Liverpool, Birmingham, Manchester and Dublin. These arriving and departing aircraft would be descending from or climbing into the upper airspace (FL245 and above). The upper airspace also accommodates flights arriving to the London FIR (Flight Information Region) from the adjacent FIRs: Scottish, Irish,

French (Brest) and the Channel Islands Control Zone as well as traffic departing from adjacent UK airspace, and overflights such as transatlantic flights to/from continental Europe. In 2019, the sponsor identifies that there were around 470,000 traffic movements through this volume of airspace.

Prior to the COVID-19 pandemic this ACP was intended to be coordinated and implemented simultaneously with ACPs being sponsored by Bristol, Cardiff and Exeter Airports and it was initially scaled as a Level 1 ACP as it had the potential to alter traffic patterns below 7,000 ft. over an inhabited area. The impact of COVID-19 resulted in the respective airports pausing their ACPs. However, the sponsor continued with progressing the proposed changes to the ATS route network above 7,000 ft. due to the wider network benefits. Therefore, to allow the ACPs to progress, the original ACP was split into two separate ACPs:

- **London Airspace Modernisation Programme 2 - Deployment 1.1 [THIS ACP]**. A network-only ACP, which will interface with the airports' existing traffic flows; and
- **London Airspace Modernisation Programme 2 - Deployment 1.2.** To implement further changes that may be required by individual airport FASI ACPs

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?	Yes
	The proposed airspace design would provide a systemised route structure in the airspace between 7,000 ft. and 24,500 ft. Free Route Airspace (FRA) is being implemented above 24,500 ft. under a separate ACP (ACP-2019-12). The sponsor predicts that the ACP will create more efficient airspace and therefore lead to a reduction in fuel burn and hence CO2 emissions. The sponsor states the airspace change is not anticipated to change the volume or types of aircraft using the airspace. However, it should be noted that the Statement of Need contradicts the statement of not leading to growth in traffic as it identifies the change is needed as the current airspace does not provide capacity for the long-term growth in aviation. Th airspace currently serves aircraft arriving at and departing from airports both within the volume of airspace and outside the volume of airspace. Within the volume of airspace are several airports, including Cardiff, Exeter and Bristol Airports. Airports outside of the volume of airspace include all London airports, Birmingham Airport, Liverpool Airport, Manchester Airport, East Midlands Airport and Dublin Airport. Currently aircraft flight plan along the published ATS (air traffic service) route structures, which are designed on ground-based radio navigation beacons and designed to standard that require 12nm spacing between adjacent routes for them to be considered separated.	

	The following ATS routes are currently in place: • Traffic flows north-south on two parallel routes, N864 & N862; • Traffic to/from the south joins via a COP (termed coordination points) on the Brest/Channel Islands border; • Traffic to/from the north joins the Manchester TMA (Terminal Manoeuvring Area); • East-west traffic from Ireland travels on ATS route Q63 routing STU – BCN – CPT; • In the southern sectors, traffic is routed on ATS route L620 or N17 (eastbound); and • There are no ATS routes between FL70-FL245 in the southwest portion of the airspace (Sector 9). Modern satellite navigation technology makes navigation between any points possible and there is less reliance on ground-based navigation beacons. Performance Based Navigation (PBN) allows air traffic control (ATC) to route direct to a point (termed a 'tactical direct'), to improve efficiency as aircraft transit through UK airspace. In addition, improvements to navigational accuracy mean that new routes can be safely positioned more closely to each other, which can enable more efficient utilisation of the airspace. The sponsor has assessed that the airspace change will lead to a reduction in total and per flight CO2. The ACP will lead to a reduction in per flight CO2, however, the sponsor has not been able to state whether the ACP will lead to growth in aircraft movements and therefore actually an increase in total CO2. Additionally, the sponsor only presents the relative benefits and therefore there is no context to understand the magnitude of this benefit.

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.

	The ACP is scaled as Level 2A and therefore noise impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.

4. Statement of Need		Status
4.1	Does the Statement of Need include any environmental factors?	Yes
	The Statement of Need (SoN) does not state environmental factors as being a driver for the airspace change. The sponsor identifies that the change is needed as the performance of modern aircraft is currently constrained by outdated airspace design, and to provide capacity for the long-term growth in aviation. As result of this need, the SoN identifies that there is *"opportunity to enable significant benefits in capacity and environmental impacts by taking those needs and changing the network to suit."* Additionally, the SoN identifies that a desired outcome will be *"Optimal alignment & connectivity of the ATS route network with each airport's airspace structures, such that network capacity should not be a significant constraint on airport capacity and environmental impacts are minimised."* However, the environmental impact referred to here is the impact for individual FASI airports rather than the volume of airspace within the scope of this ACP.	

5. Design Principles		Status
5.1	Does the final set of Design Principles include any environmental objectives?	Yes
	The final set of Design Principles (DPs) included ten principles (DP0 to DP9), two of which were labelled as being environmental, and one which is labelled as economic but would also lead to an environmental outcome: • DP2 Economic: Optimise network fuel performance • DP3 Environmental: Optimise CO2 emissions per flight • DP4 Environmental: Minimising of noise impacts due to LAMP influence will take place in accordance with local needs	
5.2	Does the proposal explain how and to what extent the final airspace design achieves any environmental Design Principles?	Partial
	During the Design Principle Evaluation at Step 2A, the sponsor evaluated the preferred option (Option 6) in the following way: • DP2 was met as it enables CCO/CDO and or reduces track mileage • DP3 was met as it provides shortest route with CCO/CDO	

	• DP4 was met as there is no change in noise impacts below 7000 ft. The final submission does not explain how DP2 enables continuous climb and descent operations (CCO/CDO) or reduces track mileage, nor does it explain how DP3 provides the shortest route. With regards DP4, the final submission explains that all changes are at above 7,000 ft. and therefore there is no change in noise impacts below 7,000 ft. However, the objective of this DP was to minimise noise impacts in accordance with local needs and there is no explanation how the airspace design allows the noise from impacted airports to minimise noise. It is however considered that this DP more relevant when the ACP was being undertaken concurrently with the individual FASI airports prior to COVID-19 and the ACP being split into two separate ACPs.	
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 draft set of DPs included two following, DPs with an environmental objective: • DP3 Environmental – Minimise fuel disbenefit • DP4 Environmental – No change to flightpaths below 7,000 ft. due to LAMP2. Following stakeholder engagement, DP3 was separated into two different Design Principles as the draft DP was "*was not clearly environmental nor clearly economic"* and *"a principle to consider emissions per flight would give a better indication of environmental performance than a total system emissions comparison at this stage, because the overall number of flights could not increase to the same degree if the region's capacity was not increased".* In addition, DP4 was reworded *"to be more consistent with the LAMP SoN, i.e., minimised environmental impacts, but this time in the context of noise impacts due to overflight below 7,000ft."*	
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
	At Step 2A, the sponsor developed six design options alongside the Do-Nothing option which was based on the current airspace situation: • Option 0: Do-Nothing (Baseline) • Option 1: Minimal systemisation - Direct routes • Option 2: Systemisation - 5nm separation	

	• Option 3: Systemised routes with 3nm separation • Option 4: Systemisation with 5nm separation with direct routing (build on Option 2) • Option 5: Current day legacy route network, enhanced with some new direct routes. • Option 6: Systemised 5nm with FRA (build on Option 4) The sponsor evaluated that: • DP2 (fuel) was not met by the Option 0; partially met by Options 2,3 and 4; and, met by Options 1, 5 and 6. • DP3 (CO2) was not met by the Option 0; partially met by Options 2,3 and 4; and, met by Options 1, 5 and 6. • DP4 (noise) was met by all options The sponsor concluded that: • Option 6 was the only option progressed through to the Initial Options Appraisal (IOA) at Step 2B that was evaluated to meet all environmental DPs; • Options 1, 5 were evaluated to meet all the environmental Design Principles equally. However, Option 1 was discounted because it did not meet DPs 5, 8, 9 and 10 and Option 5 was discounted because it did not meet DP 10; • Options 2, 3 and 4 also progress through to the IOA despite not fully meeting all the environmental Design Principles; and • At the end of the IOA, only Options 4 and 6 were progressed through to Stage 3 and the Full Options Appraisal. However, it should be noted that at Step 2A, Option 4 was referred to as 'Systemisation with 5nm separation with direct routing (build on Option 2)', 'Systemised route structure with additional direct routes', 'Systemised route structure with additional direct ATS routes and at Step 2B, Option 4 was called 'Systemised routes without FRA'. However, by Stage 3, Option 4 was called, 'Systemised routes with FRA above FL305. Therefore, at Stage 2, the option assumed that there was no Free Route Airspace but by Stage 3 it assumed there was Free Route Airspace and therefore it is not known how this option would compare against the relevant environmental Design Principles.

6. Options Appraisal		**Status**
6.1	Have environmental impacts been adequately reflected and assessed in the Options Appraisal?	Yes
	For the Initial Options Appraisal, the sponsor stated that ACP was a Level 1 ACP. However, as identified in Question 1 the ACP was divided into two separate ACPs and was therefore scaled as a Level 2A change. For Level 2A changes, CAP1616 requires an assessment of fuel and CO2 impacts of the proposed change using DfT's Transport Appraisal Guidance (TAG) greenhouse gases workbook. An assessment of the annual and per flight CO2 impacts is also required. In addition, longer-term CO2 emissions are required. The longer-term assessment is	

	normally over a 10-year period as that is the assumed life of an airspace change, however, the CAA can determine that an assessment over a longer time is required (see CAP1616 E38). The Options Appraisal quantifies and monetises CO2 using DfT's TAG Greenhouse Gas workbook. However, the assessment looks at relative changes in emissions and therefore there is no baseline to contextualise the changes. In addition, the sponsor also states the change will not lead to an increase in aircraft movements and therefore the assessments were based on one set of forecasts, despite citing capacity benefits as a driver for the change and for the preferred option.	
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?	Yes
	At Stage 3, the Full Options Appraisal assessed Option 4 and Option 6 and identified that Option 4 would lead to an anticipated reduction of 1,500 tCO2e in 2023 and Option 6 would lead to a reduction of 1,198 tCO2e in 2023 and therefore Option 4 was the better performing option if assessed in isolation. However, when combined with FRA, Option 6 is better performing and therefore is the option that progressed through to the Final Options Appraisal.	

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
	The ACP is scaled as Level 2A and therefore noise impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
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
	The ACP is scaled as Level 2A and therefore noise impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
7.3	Summary of anticipated noise impacts from the final proposed airspace change.	

	The ACP is scaled as Level 2A and therefore noise impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.

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 ACP is scaled as a Level 2A and therefore an assessment of fuel and CO2 impacts of the proposed change using WebTAG is required. This assessment must include annual totals and the changes on a per flight basis. Longer-term CO2 emissions, normally over a 10-year forecast are also required. Due to the interdependency between FRA D2 and LD1.1, in the Full Options Appraisal at Stage 3, the sponsor estimated the fuel burn and CO2e emissions savings from each of the three FRA D2 options in combination with LD1.1 Option 4 (FRA implemented at FL305 / FL245 in Sector 9) and LD1.1 Option 6 (FRA implemented at FL245). The sponsor concluded that FRA D2 Option 1 in combination with LD1.1 Option 4 provided the most benefits. The final proposed design is FRA D2 Option 1 in combination with LD1.1 Option 6. The sponsor's methodology consisted of modelling a sample day (taken as 14th June 2018) in a 30/70 easterly/westerly configuration. Trajectory profiles based on this sample day were calculated using NATS Business Intelligence (BI) data statistics on observed flight behaviours. The sponsor also states that they used AirTOP fast-time computer simulation and a mix of BADA 4.2 and BADA 3.14 to inform the aircraft fuel flow. The average fuel burn reduction per flight (8 kg for WEST) obtained was used along with the total number of flights in 2019 to get the total fuel burn and CO2e emissions savings for WEST in 2019. These results were then used to develop the benefits for the 2023-2033 period using the NATS October 21 STATFOR extended forecast growth rates. The total benefits in the WEST project were then split between FRA D2 (57%) and LD1.1 (43%) based on the percentage of time that flights spend above FL245 within UK airspace in the baseline model versus the total time spent within UK airspace in the same model. The proportion of flights whose emissions can be traded under the UK Emissions Trading Scheme (UK ETS) was derived from analysis of traffic data from the Central Flow Management Unit (CFMU) and was determined to be 24.3% (traded) and 75.7% (non-traded). At the Step 2B Initial Options Appraisal the sponsor assessed that all options would lead to an increase in per flight CO2 emissions, the Initial Options Appraisal assessed that: • Option 2: Systemisation - 5nm separation would lead to an increase of 79.5 kgCO2e per flight; • Option 3: Systemised routes with 3nm separation would lead to an increase of 79.5 kgCO2e per flight;	

	• Option 4: Systemisation with 5nm separation with direct routing (build on Option 2) would lead to an increase of 30 kgCO2e per flight; and • Option 6: Systemised 5nm with FRA (build on Option 4) would lead to an increase of 9 kgCO2e per flight. At the end of Step 2B only Options 4 and 6 were progressed to Stage 3 and the Full Options Appraisal. The Full Options Appraisal assessed that: • Option 4: Systemised routes with FRA above FL305 would lead to an increase of 1.12 kg fuel (3.6 kgCO2e) per flight; and • Option 6: Systemised routes with FRA above FL245 would lead to an increase of 0.89 kg fuel (2.8 kg CO2e) per flight. Following Stage 3 the sponsor identified Option 6 as the preferred option, despite it having lower CO2 benefits. The rationale for progressing Option 6 was because it delivered greater fuel and CO2 benefits when combined with FRA and greater capacity and resilience benefits. Therefore, Option 6 was progressed to the Final Options Appraisal at Stage 4. This appraisal assessed that Option 6 would lead to an average reduction of 11 kgCO2e per flight. The options appraisals therefore presented different estimates of CO2 impacts at each stage of options appraisal with no clarity on how the assessment evolved to determine different impacts. Additionally, the sponsor has not provided the impact of today and therefore there is no context to appreciate the magnitude of change. The sponsor also assumes no growth in traffic despite citing capacity benefits as a driver for the change and for preferring Option 6.	
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?	Yes
	The sponsor has only presented the relative changes in CO2 rather than absolute CO2 for the baseline and the proposed option as is required by CAP1616 and DfT's TAG workbooks.	
8.3	Summary of anticipated impact on CO_2 emissions from the final proposed airspace change.	
	The Final Options Appraisal identifies that the ACP will lead to a reduction of 5,208 tCO2e in 2023 and rising to 6,201 tCO2e in 2033 and the sponsor identifies that this reduction is equivalent to an average of 11 kgCO2e per flight. Over the 10-year forecast period the reduction in CO2 is 63,266 tCO2e. This 10-year forecast saving was not provided in the Final Options Appraisal and was taken from the TAG workbooks. The reduction is from 2022 to 2032 and therefore 11-years. The total monetised TAG benefit is £5,674,157. It should also be noted that the sponsor did not provide an assessment of the baseline in absolute terms. However, as per the NATS GHG	

	(greenhouse gases) Report 2021-2022, NATS' '*Scope 3 Category 11: Emissions from use of sold products or services (i.e., airspace/ATM related tCO_2 emissions)*' for FY (Financial Year) 21-22 were 13,920,072 tCO2e. Scope 3 Category 11 comprises of total CO2 emissions from aircraft in domestic airspace (Scottish and London FIRs), oceanic airspace (Shanwick FIR) and at some airports where NATS provide a tower service. The estimated savings from this Airspace Change are 5,208 tCO2e for 2023 which is 0.04% of NATS' Scope 3 Category 11 emissions. The CO2 analysis only includes flight planned routes and does not include any holding, vectoring, or streaming. Therefore, improvements in predictability leading to improved flight planning and reduced delay and holding could further increase this benefit.

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
	The ACP is scaled as Level 2A and therefore local air quality impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
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
	The ACP is scaled as Level 2A and therefore local air quality impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
9.3	Summary of anticipated impact on Local Air Quality from the final proposed airspace change.	
	The ACP is scaled as Level 2A and therefore local air quality impacts are scoped out of the assessment on the basis that all changes will occur above 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
	The ACP is scaled as Level 2A and therefore tranquillity impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
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
	The ACP is scaled as Level 2A and therefore tranquillity impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
10.3	Summary of anticipated impact on tranquillity from the final proposed airspace change.	
	The ACP is scaled as Level 2A and therefore tranquillity impacts are scoped out of the assessment on the basis that all changes will occur above 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
	The ACP is scaled as Level 2A and therefore biodiversity impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	
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
	The ACP is scaled as Level 2A and therefore biodiversity impacts are scoped out of the assessment on the basis that all changes will occur above 7,000 ft.	

11.3	Summary of anticipated impact on biodiversity from the final proposed airspace change.
	The ACP is scaled as Level 2A and therefore biodiversity impacts are scoped out of the assessment on the basis that all changes will occur above 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?	Partial
	This sponsor has stated that the ACP is not expected to result in a change in the types or number of aircraft or airspace users in the impacted airspace and therefore has only submitted one set of forecasts. No growth in traffic is assumed despite the Statement of Need identifying that today's airspace does not provide capacity for long-term growth in aviation and the Stage 3A Full Options Appraisal identifying that Option 6 is preferred due the capacity and resilience benefits. The sponsor has provided a traffic forecast covering the opening year, 2023, until 2033. The traffic forecast used is the NATS October 21 STATFOR extended forecast. The growth rate from this forecast with an assumed flat growth rate past the STATFOR using the NATS forecast was used to predict traffic figures within the WEST airspace from 2023 to 2033. In 2023 the sponsor identified that 476,048 flights per year would be impacted by the change, rising to 566,904 in 2033. The proportion of flights whose emissions can be traded under the UK Emissions Trading Scheme (UK ETS) was derived from analysis of traffic data from the Central Flow Management Unit (CFMU) and was determined to be 24.3% (traded) and 75.7% (non-traded). The routes covered by the UK ETS include UK domestic flights, flights between the UK and Gibraltar, and flights departing the UK to European Economic Area states conducted by all included aircraft operators, regardless of nationality.	

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

	British Airways, who the sponsor identified as representing 8.4% of movements through the volume of airspace, recommended improvements in the fuel burn and CO2 modelling by using assumptions informed by actual airline operators' behaviours. The sponsor responded, stating that the methodology used for estimating CO2 reductions is based on actual flight plan data. Whilst the approach suggested by British Airways is considered good practice and would lead to more realistic modelling outputs and greater granularity of benefits, there is currently no minimum standard for fuel burn modelling as there is for noise and therefore whilst not best practice, the modelling outputs do provide an indication of potential impacts. However, it should be noted that CAP1616 para 167 requires sponsors to use the most up-to-date and credible, clearly referenced sources of data, with modelling carried out in line with relevant best practice.	
13.2	Has the sponsor taken account of any consultation response submitted by ICCAN? If so, what are the outcomes?	N/A
	ICCAN did not submit a consultation response. The Stage 3 consultation gateway was held in September 2021 and ICCAN was wound down at the end of September 2021.	

14. Public Evidence Session (if held)		**Status**
14.1	If a Public Evidence Session has been held, was any <u>new</u> evidence on potential environmental impacts presented?	N/A
	No public evidence was held.	
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 was held.	

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 airspace change was eventually scaled as a Level 2A, and therefore the environmental priority is the reduction of CO2 emissions. The sponsor has demonstrated that there is an overall reduction in CO2 emissions. However, the Statement of Need cited that the change was needed because today's network "*does not provide capacity for the long-term growth in aviation.*" The forecasts used to inform the longer-term assessment were not informed by the individual airports and therefore this long-term growth is not factored into the assessment and therefore it is not apparent whether these increases in capacity will offset the reductions in CO2. In addition, the sponsor has not fully satisfied the requirements of CAP1616 or CAP1616a as the baseline environmental impact is not presented (i.e., the impact for the current situation and the starting point to contextualise the changes in CO2).	
15.2	Has the sponsor adequately considered the DfT's Altitude-Based Priorities[4]?	Yes
	In the airspace at or above 7,000 ft., the CAA should prioritise the reduction of aircraft CO2 emissions. This ACP will lead to a per flight CO2 benefit however it is not known whether the capacity benefits stated within the Statement of Need would offset this benefit and lead to an overall increase in fuel burn and CO2.	

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?	Yes
	There are no further 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.	

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
	There are no recommendations that the change sponsor should try to address before or after implementation.	

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

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
	There are no conditions that the change sponsor must fulfil before or after implementation.	
17.3	Are there any specific requirements in terms of the data to be collected by the change sponsor for the Post Implementation Review (if approved)? If yes, please list them below.	Yes
	• Measure the total CO2 and fuel burn for the current situation so that the impact of the change can be known; • Measure the impact for the top two operators along each ATS rote for the current situation and their equivalent following implementation so that there is clarity on the benefits; and • Develop a forecast that better reflects the aspirations of individual airports/operators so that the overall forecast more realistically represents the future usage and therefore provides clarity as to whether the reductions in per flight CO2 are offset by the increased capacity cited as a driver for the change	

18. Summary of Assessment of Environmental Impacts & Conclusions

The sponsor has assessed an average reduction of 11kg CO2e per flight which equates to an overall reduction of 5,208 tCO2e in 2023 and rising to 6,201 tCO2e in 2033. A reduction of 5,208 tCO2 in 2023 represents 0.04% of NATS' Scope 3 Category 11 emissions. When combined with Free Route Airspace Deployment 2 the total per flight reduction is approximately 25 kg tCO2e per flight. The per flight reduction is based on a rudimentary average of the total emissions divided by the number of aircraft movements and therefore there is no clarity how individual routes, airlines and aircraft perform.

Although the ACP has been assessed to lead to an overall reduction in CO2 emissions, the sponsor has assumed that the ACP will lead to no additional growth in traffic, despite citing capacity as a need for the change and for their preferred options, therefore it is not known whether the ACP would subsequently lead to additional traffic taking advantage of the increases in capacity and therefore lead to an overall increase in CO2 emissions.

Level 2A ACP

Environmental assessment sign-off	Name	Signature	Date

Environmental assessment completed by Airspace Regulator (Environment)	[redacted]	[redacted]		21/10/2022