

Economic regulation of NATS (En Route) plc: Initial Proposals for the next price control review ("NR23") – Other price controls

CAP2394a



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Overview

1. As explained in chapter 1 of CAP2394, the NR23 review encompasses:
 - NERL's main UK en route activities
 - NERL's London Approach service
 - NERL's Oceanic service; and
 - the Determined Costs for en route activities of the UK Meteorological Office, the CAA and DfT.
2. Chapters 1 to 7 of CAP2394 focus on NERL's main UK en route activities and cross cutting issues.
3. This document, CAP2934a, includes:
 - NERL's London Approach business – see chapter 8;
 - NERL's Oceanic business – see chapter 9; and
 - The other Determined Costs (non-NERL costs) relating to DfT, the Met Office and CAA's airspace activities that are charged to the UK en route unit rate – see chapter 10.
4. As appropriate, this document should be read in conjunction with CAP2394 and the appendices in CAP2394b and CAP2394c.

Chapter 8

London Approach

Introduction

- 8.1 The London Approach service consists of the control and sequencing of flights by NERL's Swanwick centre between NERL's en route service and the control tower services at certain London airports. London Approach was established to realise safety and capacity benefits from centrally managing congested London terminal airspace.
- 8.2 London Approach covers Heathrow, Gatwick, Stansted, Luton and London City airports. NERL levies a per flight charge, calculated based on aircraft weight, on flights using these airports. The charge is part of NERL's regulated charges that are subject to price control.
- 8.3 The London Approach service is provided from the Swanwick en route centre and uses resources and equipment that are shared with the UK en route service. We do not assess the costs and other revenues for London Approach separately from our assessment for en route charges. Instead, the London Approach charge is derived as a proportion of the total UKATS (UK en route and London Approach) determined costs.
- 8.4 Biggin Hill airport is not included in the licence definition of London Approach. However, users of Biggin Hill receive a similar, but not identical, service to that provided to the London Approach airports, using shared resources and equipment.
- 8.5 Aircraft using Biggin Hill face the same charge as those using other London Approach airports. However, NERL levies the charge directly on Biggin Hill which the airport then recovers from its users. The revenue which NERL receives from the charges is treated as 'other revenue' which is netted off the London Approach charge.
- 8.6 In producing our Initial Proposals for London Approach charges, we have considered NERL's forecast overall UKATS costs and non-regulatory revenue in the round, which we have set in a way that should allow NERL to maintain the high standard of safety it achieves in providing its UK en route and London Approach services.
- 8.7 This chapter:
- sets out stakeholder views on these matters;

- sets out the overall approach we have used in developing our Initial Proposals for London Approach; and
- considers the main issues affecting our regulation of London Approach in NR23. These include:
 - the allocation of London Approach costs between en route and London Approach regulated charges;
 - the form of any traffic risk sharing mechanism on London Approach charges; and
 - NERL's reporting of London Approach service performance and whether it should be subject to a financial incentive in NR23.

8.8 Finally, we set out our NR23 Initial Proposals for NERL's Determined Costs for providing the London Approach service.

Stakeholder views

8.9 In its business plan, NERL said that for London Approach:

- the planned scope of the service remained unchanged;
- cost allocation should continue on the same basis as in RP3; and
- the RP3 reconciliation review should apply.

8.10 As we do not do a separate assessment of London Approach costs, we have not explicitly addressed London Approach issues in our NR23 review so far. Nor have we received much stakeholder feedback on the proposed treatment of London Approach.

8.11 In response to our March 2022 letter inviting views on NERL's business plan, British Airways said that maintaining a consistent approach to calculating London Approach costs as for RP3 appeared sensible. It also said that NERL's London Approach forecasts suggested that increasing costs offset the lower costs following pandemic-related restructuring and that we should consider whether such costs accurately reflect the airspace requirements in 2025 and 2026, or whether such costs were likely to occur in the future.

Overall approach

8.12 In developing our Initial Proposals for London Approach we are mindful of the advantages of a stable regulatory framework and that a relatively simple and straightforward approach to setting charges is a proportionate approach to regulating these charges.

- 8.13 Consistent with our approach to the UK en route business, our Initial Proposals for the London Approach are based on the STATFOR October 2021 base-case traffic forecast and are presented in Table 8.1 below. We discuss our approach to traffic assumptions in more detail in chapter 1.

Table 8.1: London Approach traffic forecast

'000	2023	2024	2025	2026	2027
TNSU	926	959	974	991	1,007

Source: STATFOR October 2021

Cost allocation

- 8.14 London Approach has operational characteristics which have elements of both en route and terminal services. The service benefits aircraft overflying South-East England as well as those using London airports. In RP2 and RP3, around a third of London Approach costs were allocated to the London Approach charge with the remainder allocated to NERL's en route charges.
- 8.15 For the RP3 review NERL submitted evidence on the allocation of approach functions between en route and terminal charges used by ANSPs in Europe. NERL noted that en route charges do not apply within a 20km boundary from airports. NERL presented analysis that allocated its radar manoeuvring area between en route ($\geq 20\text{km}$) and terminal ($<20\text{km}$ less the area estimated to be handed over to tower ANS). It found that the resulting allocation was consistent with the cost allocation used in RP2, which was subsequently used for RP3.
- 8.16 In previous price control reviews, we have considered whether the London Approach cost allocation should be changed. Airlines have generally supported keeping the allocation unchanged as a pragmatic approach which is in line with the allocation in other European countries.
- 8.17 In its NR23 business plan, NERL retained the current cost allocation and there has been no pressure from airlines or other stakeholders to change the allocation.
- 8.18 Given the evidence on the reasonableness of the cost allocation used in RP3 and our policy to maintain a stable regulatory framework as the NR23 review follows so quickly after the RP3 review, we propose that the cost allocation for London Approach in RP3 should be retained for NR23.

Traffic risk sharing mechanism

RP3 TRS 2020-2022

- 8.19 The RP3 London Approach charge control condition contains a TRS mechanism that is aligned with the mechanism for the UK en route charge control condition.

- 8.20 The London Approach TRS mechanism could be calibrated differently from that used for UK en route charges. However, as traffic uncertainty applies to London Approach traffic in the same way as it does for en route traffic, NERL can do little, if anything, to affect the amount of traffic it receives, meaning the policy issues are the same for both price controls. We propose that the TRS mechanism for London Approach in NR23 should continue to be aligned with the approach for the UK en route control.
- 8.21 Our reconciliation review, discussed in chapter 3, addresses costs on a UKATS basis (that is, UK en route and London Approach). In order to arrive at a new efficient Determined Costs baseline for the calculation of the 2020 to 2022 TRS debtor for the London Approach we propose to use a simplified approach that is consistent with the ratio of London Approach Determined Costs/UK en route Determined Costs.
- 8.22 The TRS debtor then assumes a 100% pass-through of revenue under-recovery on the basis of the new efficient cost baseline spread evenly over a ten-year period, starting in 2023. This is consistent with our approach to the UK en route price control.

Table 8.2: Efficient Determined Cost baseline and the TRS debtor

		2020	2021	2022
CMA RP3 determined cost ('000)		£13,555	£13,505	£14,448
Efficient determined costs ('000)	A	£13,195	£10,997	£13,308
RP3 unit cost	B	£13.48	£13.30	£13.87
Actual/revised forecast TNSU ('000)	C	399	372	821
Amount recovered ('000)	D = B * C	£5,381	£4,946	£11,382
TRS debtor ('000)	E = A - D	£7,814	£6,051	£1,926

Source: CMA decision and CAA calculation

NR23 TRS mechanism

- 8.23 For NR23, we propose to adopt the same modified TRS mechanism for the London Approach as described in chapter 7 for the UK en route business. Any revenue recovery due to traffic downturn above 10% will be spread evenly over two years in n+3 and n+4, while revenue recovery due to variance up to 10% will continue being recovered in n+2.

Service quality

NERL reporting on London Approach performance

- 8.24 Following our 2017 investigation into NERL attributable delay affecting aircraft arriving at Stansted and Luton Airports, known as Project Oberon, NERL has provided us and stakeholders with quarterly information on delays, including NERL-attributable delay, for each airport in London Approach. There has been little NERL attributable delay for London Approach in the first half of 2022. In particular, NERL's performance on Stansted and Luton approach has improved with delay lower than pre-pandemic even taking account of lower traffic volumes. This is at least in part because NERL has made the AD6 airspace change which replaces the single approach route into Stansted and Luton with separate routes for each airport and has increased the number of air traffic controllers validated for London Approach.
- 8.25 In our 2018 to 2021 investigation into the same issue, known as Project Palamon, we decided that NERL should continue to provide us and stakeholders with this quarterly information until at least 2025. We do not propose to change this reporting requirement as part of this consultation. The information is included in NERL's quarterly performance reports which it is required to send us under Condition 11 of its licence. NERL's reporting is reviewed each year under this condition.

Financial incentives on NERL's performance

- 8.26 While there are financial incentives on NERL's delay and environmental performance in the UK en route charge control, there are no financial incentives applied to the London Approach.
- 8.27 We note that by its design, the 3Di metric captures NERL's performance in approach to London airports. This is different to the EU-wide metric of horizontal flight efficiency (KEA) which excludes the area within 40 nautical miles from an airport. The 3Di targets and incentives are discussed in chapter 2.
- 8.28 Although we investigated NERL's London Approach delay performance in both Project Oberon and Project Palamon, and in Project Palamon found that NERL had breached its licence, we did not conclude in either investigation that we should introduce new price control financial incentives on London Approach delay. Project Palamon was specifically concerned with the approach service to Stansted and Luton rather than the whole London Approach service and so any incentive applied to all London Approach airports could be disproportionate. Conversely, any incentive applied only to Luton and Stansted might result in unintended consequences for the remaining London Approach airports. We will monitor the information NERL provides during NR23 and may return to this issue in the future if appropriate.

Initial Proposals

- 8.29 In developing our Initial Proposals for London Approach we are mindful of the advantages of a stable regulatory framework and that a relatively simple and straightforward approach to setting charges is proportionate to regulating these charges. In summary for NR23 we propose to:
- retain the RP3 cost allocation for London Approach;
 - use the same traffic risk sharing mechanism for London Approach charges as we do for en route charges; and
 - retain the requirement on NERL to report on its London Approach delay performance.
- 8.30 We are not proposing to introduce a financial incentive on NERL-attributable London Approach delay performance, but we will keep this under review.
- 8.31 This approach furthers user interests by requiring NERL to continue to report on its delay performance and by continuing to monitor NERL's performance. It supports NERL's financeability through the stability of the framework, by using the same approach to cost allocation, financial incentives for service quality, and adopting a consistent approach to traffic risk sharing.

Determined costs for London Approach

- 8.32 Based on the cost allocations from total UKATS costs and revenues we are proposing the London Approach Determined Costs and DUC in Table 8.3 below:

Table 8.3: Initial Proposals on cost allocations for London Approach

2020 CPI prices	2023	2024	2025	2026	2027
Determined Costs real (£000)	14,320	14,647	16,084	16,244	16,503
Terminal forecast units (000)	926	959	974	991	1,007
DUC (£)	15.47	15.27	16.51	16.39	16.39

Source: CAA for costs, STATFOR October 2021 for traffic forecast

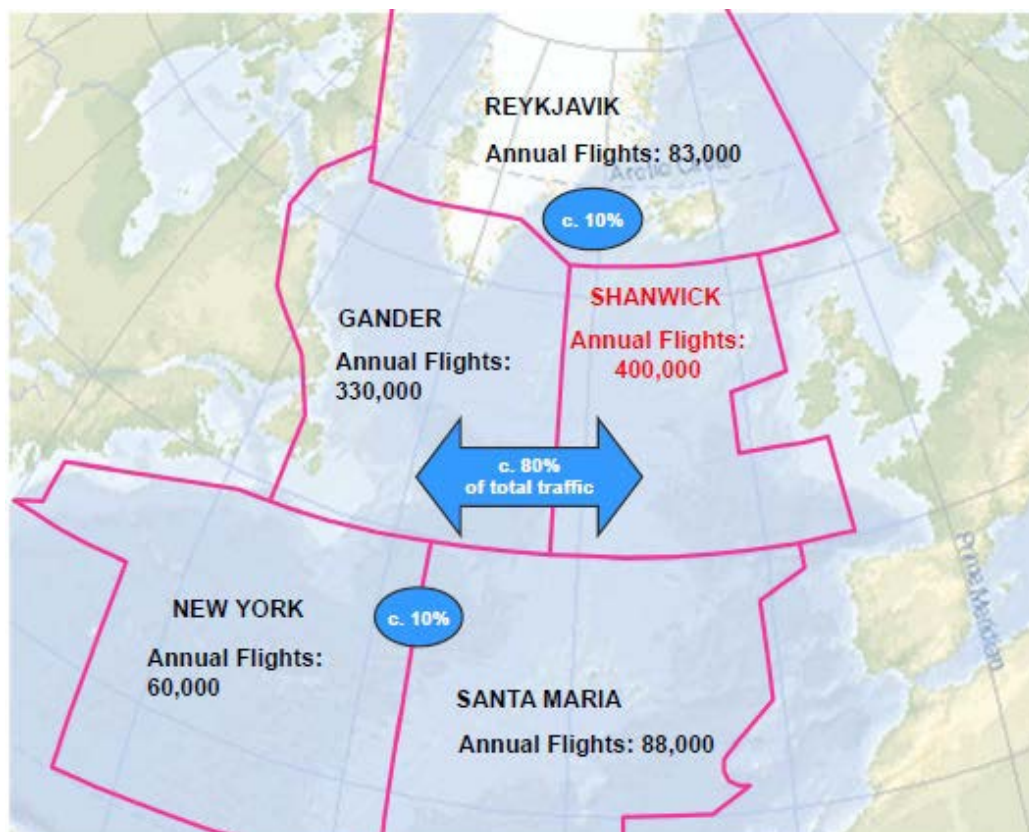
Chapter 9

Oceanic

Introduction

- 9.1 While it is also regulated through the TA00 and implemented through conditions in NERL's licence, the Oceanic service is not a part of the UK performance plan required under the Eurocontrol Principles. Having considered our statutory duties, in general, our method for calculating the Oceanic price control mirrors the method for calculating NERL's UK en route price control. We are mindful of the advantages of a stable regulatory framework and that a relatively simple and straightforward approach to setting charges is a proportionate approach to regulating the Oceanic service.
- 9.2 There are five Oceanic Control Areas across the North Atlantic. The management and development of this airspace is governed by the International Civil Aviation Organisation (ICAO) through the North Atlantic System Planning Group and subgroups. The majority of flights (around 80%) are handled by a combination of the Shanwick service and the service provided by Nav Canada from Gander.

Figure 9.1: Oceanic Control Areas in the North Atlantic (from 2014)



Source: NERL

- 9.3 The management of the Shanwick area of Oceanic airspace is delegated to the UK and Ireland by ICAO. NERL's Oceanic service provides air traffic services and datalink communications, while Ireland is responsible for high frequency communications. In 2019 NERL introduced a space-based automatic dependent surveillance broadcast (ADS-B) system to its Oceanic service, using satellites to provide more accurate and timely aircraft positioning information compared to the existing procedural approach.
- 9.4 The Oceanic service is a relatively small part of NERL's overall business, consisting about 7% of NERL's opex costs in NR23, and 6% of total costs (which include capex). The Oceanic RAB represents about 2% of NERL's total RAB.
- 9.5 This chapter sets out our proposals for NERL's Oceanic service for the NR23 period. It includes proposals for:
- the Oceanic price control building blocks, including
 - traffic forecast;
 - Oceanic costs;
 - the financial framework;
 - a summary of Oceanic charges;
 - traffic risk sharing for the Oceanic service;
 - Oceanic service quality; and
 - an update on the ADS-B review.

Oceanic price control building blocks for NR23

- 9.6 We set out below our Initial Proposals for each regulatory building block that makes up the maximum allowed charge for the Oceanic service in NR23.

Traffic forecast

- 9.7 STATFOR does not publish a specific Oceanic traffic forecast. Instead, NERL produces a forecast based on STATFOR's assumptions around traffic flows over the North Atlantic. The Oceanic forecast used by NERL for its customer consultation process was derived from STATFOR's May 2021 projections.
- 9.8 Following customer consultation, NERL updated its traffic assumptions from its business plan to take account of STATFOR's October 2021 forecast. NERL explained that the forecast is derived by applying the growth rates for traffic flows that would enter the North Atlantic to the 2020 actual flights, on the basis of STATFOR data.

- 9.9 In response to feedback from stakeholders, we explored the availability of other forecasts for the Oceanic service, specifically from the ICAO North Atlantic Economic Financial and Forecast Group. However, we understand that no forecast has been published by the group since the covid-19 pandemic and that NERL is the main contributor to drafts being developed by the group now, and that this is consistent with the assumptions used in its business plan.
- 9.10 We also considered the June 2022 forecast for the period 2022 to 2024, but have the same concerns as with the UKATS forecast as discussed in chapter 1.
- 9.11 We consider that the forecast derived by NERL from the STATFOR October 2021 forecast is the appropriate approach for our Initial Proposals.

Table 9.1: Oceanic traffic forecast

Flights, '000	2021	2022	2023	2024	2025	2026	2027
Total	234	386	499	488	498	509	520
North Atlantic	224	367	475	462	469	479	489
Tango	10	19	24	26	29	30	31

Source: NERL derived from STATFOR

Note: numbers may not add up due to rounding

Costs

- 9.12 The approach to setting the cost baseline for the Oceanic price control closely mirrors the approach and method for setting the efficient cost baseline for the UKATS building blocks, as set out in chapter 4.

NERL's NR23 Business Plan

- 9.13 Table 9.2 below sets out costs from 2019 to 2022 (noting that 2022 costs shown are a forecast), and the evolution of NERL's forecast NR23 Oceanic costs, as submitted in its business plan.

Table 9.2: Oceanic costs from 2019 to 2027 (actuals and NERL's business plan forecasts)

£m, 2020 prices	2019 (A)	2020 (A)	2021 (A)	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)	2027 (F)	Total NR23	Avrg. NR23 Vs 2019
Staff costs*	14	15	10	11	12	12	12	13	13	62	-9.8%
Cash pensions	4	4	4	4	6	6	5	5	5	26	28.1%
Non-staff costs	5	10	11	16	20	20	19	20	20	99	272.3%
Total opex	23	29	25	31	38	38	37	38	37	187	61.5%
Capex	2	2	1	3	6	7	6	3	1	22	123.8%

Source: Steer report; NERL BP, CAA analysis

Notes: * Inclusive of redundancy, less capitalised labour and pensions. Greyed out columns are the reconciliation period.

A = Actual; F=Forecast

- 9.14 In NERL's business plan average total opex per year in NR23 is forecast to be around 60% higher than in 2019, in real terms, with average capex spend per year forecast to be over 120% higher than in 2019.
- 9.15 Non-staff opex for Oceanic increases significantly in NR23 relative to 2019. This is partly driven by issues such as NERL's continued maintenance of legacy systems, because of delays to its capex programmes. A significant proportion of Oceanic non-staff opex (around 75% over NR23) relates to the costs of the satellite-based ADS-B service. ADS-B related costs are addressed at the end of this section.

Stakeholder views

- 9.16 Stakeholders have not expressed any specific views on NERL's proposed Oceanic service costs. Their views on NERL's costs generally are set out in chapter 4.

Our views and Initial Proposals

- 9.17 For most building blocks, we have assessed NERL's costs at a total level and propose different price controls for UKATS and Oceanic based on NERL's allocation of costs (after we have applied efficiency adjustments). The specific adjustments we have applied to NERL's proposed business plan costs, are set out in more detail in chapter 4.
- 9.18 In the tables below, we compare NERL proposed costs and our view of the base and the low cases respectively, for the Oceanic service.

Table 9.3: NERL business plan Oceanic costs vs. CAA Initial Proposals (base case)

£m, 2020 prices*	2023	2024	2025	2026	2027	NR23
NERL BP staff opex	12.0	12.0	12.4	13.0	13.1	62.5
CAA base case staff opex	11.2	11.3	11.3	11.9	11.8	57.5
<i>Difference: CAA base case vs. NERL BP</i>	-0.8	-0.7	-1.0	-1.1	-1.2	-5.0
NERL BP pensions	5.6	5.5	5.0	4.9	4.6	25.6
CAA base case pensions	5.3	5.3	3.4	3.2	3.0	20.3
<i>Difference: CAA base case vs. NERL BP</i>	-0.2	-0.2	-1.6	-1.7	-1.6	-5.3
NERL BP non-staff opex	20.3	20.0	19.3	19.8	19.8	99.2
CAA base case non-staff opex	20.3	19.9	19.2	19.7	19.7	98.9
<i>Difference: CAA base case vs. NERL BP</i>	0.0	-0.1	-0.1	-0.1	-0.1	-0.3
NERL BP capex	5.7	6.6	5.6	2.8	0.9	21.7
CAA base case capex	5.7	6.6	5.6	2.8	0.9	21.7
<i>Difference: CAA base case vs. NERL BP</i>	0.0	0.0	0.0	0.0	0.0	0.0

Source: CAA

Note: * Opex costs are presented in 2020 CPI prices, while capex is in 2020 RPI prices.

9.19 Consistent with our wider approach to costs assessment set out in chapter 4 the adjustments we have made to NERL's UKATS costs that flow through to Oceanic costs in the base case include:

- adjusting staff opex to reflect assumed lower growth in average wages (relative to CPI) during NR23, a higher assumed level of ATCO productivity (1.5% per annum relative to no productivity improvements assumed by NERL) and a lower number of graduates required in NR23. These adjustments result in a cumulative reduction in staff opex of £5 million, relative to NERL's business plan. Our allowance is for staff opex overall. It is for NERL to decide how to operate its business given the allowances and service quality targets;

- adjusting pension costs to reflect the efficient range proposed for staff opex, adjusting DB ongoing contribution and deficit repair costs in line with the GAD mid-point estimate, from 2025 onwards, when the next valuation is due to take effect; and adjusting DC costs to reflect a new DC contribution rate for new joiners from 2024 onwards, as per the Steer analysis. These adjustments result in a cumulative reduction in pension costs of £5.3 million over NR23, relative to NERL's business plan;
- adjusting non-staff opex to reflect removal of CAA fees (this is not an efficiency adjustment but rather a re-allocation), efficiencies relating to RP2 capex and adjusting UTM development costs to keep them at 2022 levels throughout NR23. These adjustments result in a cumulative reduction in non-staff opex of £0.3 million, relative to NERL's business plan; and
- no adjustments applied to capex in the base case.¹

¹ For UKATS, in the base case, we have only adjusted the risk and contingency allowance proposed by NERL (equivalent to 8% of the UKATS capex portfolio), to be in line with the RP3 allowance (5%). NERL did not split the risk and contingency allowance into a UKATS allowance and an Oceanic allowance. As a simplifying assumption, we have assumed that the full risk and contingency allowance is allocated to the UKATS capex portfolio. Therefore, we have not applied any adjustments to the Oceanic capex allowance in the base case.

Table 9.4: NERL's forecasts of Oceanic costs vs. CAA Initial Proposals (low case)

£m, 2020 prices*	2023	2024	2025	2026	2027	NR23
NERL BP staff opex	12.0	12.0	12.4	13.0	13.1	62.5
CAA base case staff opex	11.1	11.1	11.0	11.5	11.4	56.0
<i>Difference: CAA base case vs. NERL BP</i>	-0.9	-1.0	-1.3	-1.5	-1.7	-6.5
NERL BP pensions	5.6	5.5	5.0	4.9	4.6	25.6
CAA base case pensions	3.8	3.8	3.3	3.2	2.9	17.1
<i>Difference: CAA base case vs. NERL BP</i>	-1.7	-1.7	-1.7	-1.8	-1.7	-8.6
NERL BP non-staff opex	20.3	20.0	19.3	19.8	19.8	99.2
CAA base case non-staff opex	20.3	19.9	19.2	19.7	19.7	98.9
<i>Difference: CAA base case vs. NERL BP</i>	0.0	-0.1	-0.1	-0.1	-0.1	-0.3
NERL BP capex	5.7	6.6	5.6	2.8	0.9	21.7
CAA base case capex	5.3	6.1	5.2	2.6	0.9	19.9
<i>Difference: CAA base case vs. NERL BP</i>	-0.5	-0.5	-0.5	-0.2	-0.1	-1.7

Source: CAA

Note: * Opex costs are presented in 2020 CPI prices, while capex is in 2020 RPI prices.

9.20 Similarly, we have applied the following additional adjustments to the Oceanic building blocks in the low-cost case:

- adjusting staff opex to take account of the top-down staff cost benchmarking by Steer, to bring NERL staff cost level more in line with market benchmarks over the course of NR23. This results in a further reduction of £1.5 million over the course of NR23, relative to the base case;
- adjusting pension costs to reflect the further reduction to staff costs (see previous bullet); and adjusting DB ongoing contribution and deficit repair costs in line with the GAD mid-point estimate, from 2023 onwards. These adjustments result in a further reduction in pension costs of £3.3 million over NR23, relative to the base case;
- no further adjustments applied to non-staff opex relative to the base case;
- adjust Oceanic capex costs by 8% relative to NERL's business plan, to reflect the lack of detailed information in NERL's capex plan (more detail on this is available in chapter 4).

ADS-B costs

- 9.21 ADS-B was introduced in 2019 with material costs incurred from 2020 (around £6.5 million per annum), increasing steadily until the beginning of NR23, after which they stabilise. NERL has indicated that these costs are driven by the number of Oceanic flights using the technology. For NR23, NERL's proposed ADS-B related costs are on average £15 million per annum.
- 9.22 NERL's business plan does not appear to lead to significant changes in ADS-B costs from those observed in RP3. We also intend to carry out a further ADS-B review during NR23 (see below). Bearing these considerations in mind we have used NERL's forecasts of ADS-B costs in these Initial Proposals.

Financial framework

WACC

- 9.23 NERL is financed on a company-wide basis and the WACC has been assessed on that basis. In previous price control periods, we have applied a single cost of capital to both the UK en route and Oceanic price controls. We propose to continue this approach for NR23.
- 9.24 Consistent with the approach to the UK en route price control, we propose to apply a vanilla WACC of 2.81% in calculating the Oceanic price control charges. The rationale for this value is set out in detail in chapter 5 and appendix C.

RAB

- 9.25 Consistent with the UK en route price control, the Oceanic service RAB reflects the amount invested by NERL in providing these services. We follow the same approach to calculation of the Oceanic RAB as applied for the UK en route price control. See chapter 5 for further discussion of our approach to the RAB, including stakeholder comments.
- 9.26 The only difference between the Oceanic and UK en route price controls approach to the RAB is that the Oceanic service did not have a TRS mechanism for RP3, and there is no RP3 TRS debtor in the Oceanic RAB as there is for UK en route. This drives significant growth in the RAB over RP3 for UK en route but we observe the opposite for Oceanic, as NERL cut capex during the covid-19 pandemic. This resulted in the Oceanic RAB being lower during RP3 than in 2019.
- 9.27 Our proposed RAB for Oceanic for NR23 compared to NERL's proposal is shown below in Table 9.6. Our average RAB is lower than NERL's proposal, driven by:
- lower capital expenditure allowance than in NERL's business plan; and

- lower allowed depreciation allowance resulting from the lower capital expenditure allowance.

Table 9.6: Proposed Average Oceanic RAB for NR23

Average RAB, £m 2020 Prices	2023	2024	2025	2026	2027	Average RAB
NERL BP	35	37	39	39	36	186
CAA NR23	34	35	35	34	32	170

Source: NERL Business Plan, "NR23 Business Plan - Appendix I: Determined costs, DUCs and prices," page 6; CAA Calculations.

Regulatory depreciation

- 9.28 Consistent with the UK en route price control, we make projections of depreciation to enable NERL to appropriately recover the Oceanic RAB from airspace users during the price control. We follow the same approach as applied for the UK en route price control to Oceanic. See chapter 5 for further discussion of our approach to depreciation, including stakeholder comments.
- 9.29 Our proposed depreciation for Oceanic for NR23 compared to NERL's proposal is shown below in Table 9.7. Our average depreciation is slightly lower than NERL's proposal driven by our lower proposed capital expenditure allowance than NERL has proposed in its business plan, which lowers depreciation as it is a function of the existing RAB and new capital expenditure.

Table 9.7 Oceanic Proposed Depreciation Profile

Depreciation, £m 2020 Prices	2023	2024	2025	2026	2027	Total
NERL BP	6	6	5	5	4	26
CAA NR23	5	5	5	5	4	24

Source: NERL, "NR23 Business Plan," Appendix I, 7 February 2022, page 3; CAA calculations.

Summary of Oceanic building blocks and charges

- 9.30 The table below summarises our Initial Proposals for the Oceanic building blocks for NR23. These include all the building blocks that were included in RP3.
- 9.31 NERL proposes to retain the two-tier charging arrangements included as part of RP3² for Oceanic use of ADS-B, which we have adopted in our proposals, namely:

² For RP3, after a simplified Cost-Benefit Analysis, the CAA agreed to NERL including the costs of ADS-B in Oceanic charges as a per-flight 'pass through' item. See CAP1830.

- a fixed per flight charge for North Atlantic flights (passing on its data costs for using ADS-B directly with no additional margin); and
- a charge for Tango flights, calculated by sharing the fixed cost of providing data in the Tango region across the annual forecast of flights in that region.

Table 9.8 Oceanic proposed building blocks

£m, 2020 Prices	2023	2024	2025	2026	2027
Operating cost (staff and non-staff)	16.3	16.5	16.3	17.1	16.7
Exceptional items	0.0	0.0	0.0	0.1	0.1
Pensions	5.3	5.3	4.1	3.9	3.7
Other income	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)
Regulatory depreciation ³	5.1	5.5	4.7	4.7	4.5
Return on RAB ⁴	2.2	2.5	1.9	1.9	1.7
Total core costs	28.8	29.6	26.8	27.5	26.7
Traffic forecast: North Atlantic (000s)	475	462	469	479	489
Traffic forecast: Tango (000s)	24	26	29	30	31
Unprofiled core charge per flight (£)	57.6	60.7	53.9	54.0	51.3
ADS-B data costs: Tango	0.2	0.1	0.1	0.1	0.1
ADS-B data costs: North Atlantic (NA)	15.0	14.5	14.1	14.3	14.6
Unprofiled ADS-B data charge per NA crossing	31.6	31.5	30.0	29.9	29.9
Unprofiled ADS-B data charge per Tango area crossing	6.3	5.7	4.9	4.7	4.5

Source: CAA calculations

³ This includes the backlog on depreciation. Note that consistent with capex figures presented elsewhere in this document, regulatory depreciation is shown in 2020 RPI deflated prices (rather than CPI deflated prices).

⁴ This includes the corporation tax allowance.

Traffic risk sharing

- 9.32 RP3 did not include a TRS mechanism on the Oceanic service as the charging arrangements put in place mitigated the traffic risks that arose from the introduction of the ADS-B service.⁵
- 9.33 As discussed in chapter 7, NERL's NR23 business plan proposed to extend the TRS mechanism of its en route service to its Oceanic price control. The proposed Oceanic TRS would cover the core costs only, and exclude the ADS-B data services contract with Aireon.
- 9.34 There was no support from airlines to introduce TRS on Oceanic. Prospect supported NERL's proposals for an adjusted TRS recovery mechanism and its extension to the Oceanic price controls.
- 9.35 As we note in chapter 7, we do not intend to extend the TRS mechanism to the Oceanic price controls at this stage. While we recognise that it may go some way in mitigating traffic uncertainty, we consider that on balance, it might introduce unnecessary complexity to the price control with limited benefits for customers. We note that a substantial portion of the Oceanic service is already protected from traffic risk under contractual arrangements with Aireon.

ADS-B review

- 9.36 In response to work undertaken by ICAO to enhance safety standards in the North Atlantic Area, in late 2019 NERL introduced space-based ADS-B to provide more accurate and timely aircraft position information for flights crossing the North Atlantic.
- 9.37 In our RP3 decision we allowed NERL to recover costs associated with the introduction of ADS-B for its Oceanic activities. We also included a requirement in NERL's licence that it should commission a review of the costs and benefits of ADS-B.
- 9.38 The CMA determination agreed it was appropriate for NERL to include an uplift to its Oceanic charges to recover these costs, but that the CAA could reconsider the regulatory allowance for ADS-B and any efficiency adjustments following an independent review on the costs and benefits of the service. In May 2022 we published a working paper providing an update on this review, identifying early thinking and proposing next steps in relation to the review.⁶ We anticipate that the review will commence at an appropriate time in NR23 once suitable data is

⁵ CAP1830, chapter 11

⁶ Economic Regulation of NATS (En Route) plc: working paper on the review of the costs and benefits of space-based ADS-B in the North Atlantic CAP2351. See www.caa.co.uk/CAP2351

available and metrics have been developed, with appropriate input from stakeholders.

- 9.39 It remains our position that the issues in relation to developing appropriate metrics to measure the costs and benefits of ADS-B should not be addressed as part of the NR23 process but should be dealt with separately in the context of the review discussed above.

Oceanic service quality

- 9.40 NERL's NR23 business plan proposes targets in Oceanic airspace for its service performance, with measurement of:
- 90% of flights being provided with the requested clearance (or operationally equivalent profile); and
 - 80% of flights being cleared for variable speeds to allow speeding up/slowing down to achieve operational benefits.
- 9.41 NERL considers that the use of these targets would be dependent on aircraft being authorised to use relevant equipment, increased use of ADS-B benefits and agreement with users on what is meant by operationally equivalent profiles. NERL proposed to engage with airlines on these questions.
- 9.42 We will consider our approach for our final performance plan decision in light of NERL's planned engagement with airlines on the service measures it proposes.

Chapter 10

Non-NERL costs

Introduction

- 10.1 In addition to the costs associated with NERL's UK en route activities, the UK unit rate also includes other non-NERL costs associated with the provision, oversight and development of en route ATS in the UK, specifically:
- DfT costs – the UK share of the running of Eurocontrol;
 - Met Office costs – the aviation share of providing meteorological services used by the sector; and
 - CAA – costs incurred in the regulation, oversight, strategy and policy of UK ATS and airspace.
- 10.2 In line with the Eurocontrol Principles these costs are established on a Determined Costs basis and are aggregated with NERL's Determined Costs, as part of a draft performance plan for the UK and containing overall UK Determined Costs, as set out in chapter 6.
- 10.3 This chapter sets out the relevant non-NERL Determined Costs for the NR23 period.

Department for Transport

Context

- 10.4 The DfT element of en route costs represents the UK's share of costs for the running of the Eurocontrol Agency.
- 10.5 Eurocontrol Member States are responsible for setting the Agency's budget and monitoring actual expenditure. The UK has been a member of Eurocontrol's Standing Committee on Finance and has encouraged efficiency measures designed to reduce Eurocontrol's costs in real terms over the past decade. During the covid-19 pandemic, Eurocontrol took a number of additional measures to reduce its costs in the short term and seek to support the liquidity of both airlines and ANSPs.
- 10.6 Each Member State's contribution to Eurocontrol costs is determined by GDP-based 'sharing factors' that determine the proportion funded by each Member State, and the exchange rate of the euro against local currency.
- 10.7 In line with the Eurocontrol Principles, Member State costs are subject to adjustments for over- and under- recovery, where actual costs are significantly

different to those included in Determined Costs.⁷ These adjustments are generally implemented on an n+2 basis.

DfT proposals

Table 10.1 Department for Transport NR23 Determined Costs

£m	2022	2023	2024	2025	2026	2027
Total determined costs (nominal)	49.0	49.2	49.4	50.2	51.5	51.5
Total determined costs (2020 prices)	47.1	42.9	42.4	42.3	42.5	42.5

Source: DfT

Met Office

Context

- 10.8 The provision of meteorological (MET) services and capability for aviation is designed to meet the current and future operational requirements as defined within ICAO's Annex 3 to the Chicago Convention (Meteorological Services for International Air Navigation), while also addressing the future requirements outlined in ICAO's Global Air Navigation Plan and noting the direction of development described within the EU Common Project 1 (CP1) and the UK AMS. In parallel, there is also a significant UK Government investment in Met Office supercomputing capability (18 times current supercomputing capability anticipated by 2028), which will enable aviation services to benefit in terms of accuracy and detail.
- 10.9 The arrangements for MET comprise two broad elements:
- National Capability and International Subscriptions, specifically referring to the underpinning infrastructure and shared commitments that are fundamental to the provision of an accurate weather forecasting capability; and
 - Service Delivery and Development, which focus on the delivery of aviation specific MET services and their ongoing improvement.
- 10.10 National Capability and International Subscriptions costs are the en route share of the underpinning infrastructure needed to operate a weather forecasting service. This includes an appropriate surface and upper air observing network (as specified by the World Meteorological Organisation), the operation of a supercomputer, numerical weather prediction and a contribution to European weather satellite programmes (operated by European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)). Following extended

⁷ Eurocontrol Principles, paragraph 3.3.4.2(b)

lifetime operations for the existing satellites, two satellite programmes are expected to progress to their next generation of capability in 2024, with the launch and operation of the 3rd generation EUMETSAT Meteosat geostationary satellite and the EUMETSAT polar orbiting satellite. Satellite data is the primary source of the type of observations that enable an accurate global weather forecasting capability. The UK aviation contribution to National Capability and International Subscriptions is calculated in accordance with the guidelines contained within ICAO Document 9161, Manual of Air Navigation Service Economics. National Capability and International Subscription costs are primarily funded by UK Government Department for Business, Energy and Industrial Strategy and the contribution of civil aviation equates to approximately 15% of the total costs.

- 10.11 MET Service Delivery costs are those associated with providing the specific products and services required as part of the UK's obligations within ICAO Annex 3. This includes the provision of services in support of UK aviation, the World Area Forecast System (WAFS) and the Volcanic Ash Advisory Centre, utilising human resources (for example, aeronautical meteorologists) and IT production and dissemination systems (for example, post processing systems that can turn numerical weather prediction data into specific aeronautical information). Through NR23, a 2.5% year on year efficiency is expected to be achieved through a series of production changes and developments. Contributing to this savings measure is a significant upgrade of the WAFS service in November 2024, which is expected to enable a coincident reduced headcount cost.

NR23 MET Service Delivery activities

- 10.12 In support of the MET Service Delivery, a series of additional activities and MET Service Improvement plans are expected to progress. These include:
- the continued provision of a team of specialist meteorologists co-located at NERL's area control centre in Swanwick to enable the improved weather resilience of UK en route ATM. This is to compliment and support the wide range of MET data services in support of NERL;
 - web visualisation services, including providing information for General Aviation activities in the UK, and the ongoing provision and development of the Network Weather Resilience (NWR) tool. NWR is designed to enable access to and visualisation of high quality and consistent aviation MET information for all UK aviation stakeholders;

- Aviation Data Services, focussing on the development of System Wide Information Management (SWIM)-compliant aviation data MET services including the introduction of the next generation of WAFS datasets and the Quantitative Volcanic Ash ICAO standard. This will enable access to much higher detail and accurate MET forecast information, for the UK and globally;
- Volcanic Ash research, development, and observations. This includes specific scientific research and development to enable the utilisation of 'ensemble' modelling within the volcanic ash forecasting process (effectively enabling the quantification of uncertainty or risk) plus the development of sulphur dioxide forecasting capabilities. For specific volcanic ash observations, work is proposed to modernise and increase the resilience of the UK Volcanic Ash Light Detection and Ranging Systems network, and further to renew a capability for an airborne Volcanic Ash monitoring capability; and
- Aviation Research and Development will focus on improving forecast skill for global en route hazards and improved understanding and forecasting of weather in UK airspace. For the global domain, this includes convection/cumulonimbus, turbulence, in-flight icing and high-altitude ice crystals. For the UK, the main areas of activity will utilise very high resolution and 'ensemble' modelling to develop skill for convection in the UK, disruptive conditions at UK airports, and improvements to terminal aerodrome forecast verification and forecasting.

Stakeholder views

- 10.13 The Met Office consulted directly with stakeholders on its NR23 Determined Costs in 2021 and early 2022, through written consultation and an NR23 stakeholder event. The feedback received was largely supportive of the Met Office's plans. One stakeholder sought further justification for maintaining a specific aircraft for monitoring volcanic ash; consequently the Met Office intends to engage further with us on the best approach. In response to other feedback, the Met Office said it will develop guidance material and offer assistance for the operational implementation of SWIM-compliant MET data services, and will develop a Network Weather Resilience user group to help determine the direction and priority of development.

Met Office proposals

- 10.14 The Met Office Determined Costs for 2023 comprise:
- Contribution to National Capability and International Subscriptions of £18.8 million;
 - Met Service Delivery activities of £8 million; and

- Specific MET developments of £7.5 million.

10.15 This provides for a total Met Office Determined Cost of £34.3 million, in 2023. The following table shows how Determined Costs are expected to evolve over the NR23 period.

Table 10.2 Met Office NR23 Determined Costs (nominal and 2020 prices)

£m	2022	2023	2024	2025	2026	2027
National Capability and International Subscriptions		£18.8	£23.3	£25.9	£26.4	£26.4
Aviation MET Service Delivery		£8.1	£8.0	£6.8	£6.8	£6.6
Aviation MET Service Development		£7.5	£7.4	£6.7	£6.7	£6.8
Total Determined Costs (nominal)	£31.6	£34.3	£38.6	£39.5	£39.9	£39.9
Total Determined Costs (2020 prices)	£30.4	£29.9	£33.2	£33.3	£33.0	£33.0

Source: Met Office

10.16 Under the Eurocontrol Principles, the Met Office is not subject to traffic risk sharing; however, mindful of the impact of the covid-19 pandemic on the sector, it has decided to recover only its actual (reduced) costs versus its Determined Costs for 2020.

CAA

Context

10.17 The CAA's Determined Costs reflect the staff, other operating and capital costs associated with our airspace and ATS responsibilities.

Table 10.3 CAA NR23 costs (nominal and 2020 prices)

£m	2023	2024	2025	2026	2027
Staff	12.9	13.2	13.6	13.9	13.9
Other operating costs	6.0	5.7	5.6	6.5	5.9
Depreciation/cost of capital	0.2	0.2	0.2	0.2	0.2
Pension costs	6.0	6.0	6.0	6.0	6.0
Total (nominal)	25.1	25.1	25.4	26.6	26.0
Total (2020 prices)	21.9	21.5	21.4	21.9	21.5

Source: CAA

10.18 Most of these costs relate to airspace regulation and oversight activities. In particular SARG, which is responsible for the planning and regulation of all UK airspace, including the navigation and communications infrastructure.

- 10.19 The Secretary of State's 2018 Air Navigation Directions, place an obligation on the CAA for the development and delivery of a UK AMS. This activity, which includes policy and strategy development, as well as monitoring and reporting, is predominantly performed by the Airspace Modernisation team, within the CAA Strategy and Policy function, with key technical inputs from SARG. The AMS 2018 will be replaced by a refreshed AMS at the end of 2022, the activities to implement and further develop this will continue through NR23 and beyond.
- 10.20 Historically, the costs of our safety and economic regulation of en route air navigation services have been charged directly to the ANSPs and form part of their cost base. While this will remain the case for safety regulation, from 2023 the costs of economic regulation, sometimes referred to as the 'NERL licence fee', will form part of the CAA's Determined Costs. The transfer of costs from the NERL cost base to the CAA, will be net neutral to users paying the en route charge, with the associated increase in CAA costs being matched by an equivalent reduction in NERL's allowed costs.

Our Initial Proposals

- 10.21 In 2027 we forecast that our Determined Costs will be £21.5 million, compared to £18.6 million at the end of 2022. The increase driven by a number of factors, including the following.
- Additional staff costs associated with growth in, and complexity of, Airspace Change Proposals (ACP) and airspace modernisation - in 2018 there were 18 ACPs per year submitted to the CAA, by 2021 this had risen to 122, and is expected to rise to 150 per annum. There will also be a significant number of and increasingly complex ACPs required in support of airspace modernisation and associated policies, including navigation aid rationalisation, implementation of global navigation satellite systems approaches, the airspace classification review and environmental objectives. In addition, there will be the introduction of new areas of focus, for example integration of new users (for example, BVLOS Drones, Space and High-Altitude Aerial Platforms) and enhancing the Class G environment, to the benefit of autonomous visual flight rules flyers (for example, much of general aviation and the MoD).
 - Airspace Coordination and Obstacle Management Service (ACOMS) - in 2021 we began work on the ACOMS project, to replace the current dated and piecemeal technology we use for case management and deconfliction of unusual airspace activity and temporary airspace structures. ACOMS will provide a single, resilient and reliable technology platform, and provide an automated process for Remotely Piloted Aircraft Systems, cranes and En Route Obstacles applications. The project is expected to complete in mid-2023, with the remaining project and ongoing maintenance costs included our NR23 costs.

- Historical pension obligations - when the CAA and NATS separated in 2001, existing NATS and deferred pensioners were retained as part of the CAA section of the CAA Pension Scheme (CAAPS). At the time CAAPS carried a provision to meet this Pensions Benefit Obligation (PBO), including in respect of increases in longevity for these pensioners. Increases in life expectancy have now depleted that provision, in addition the assets backing the PBO are gilts have not kept pace with liability changes. Overall, further funding to the original provision is needed in order to meet the PBO and we will continue to recover £6 million per annum throughout NR23 to meet these liabilities.
- Transfer of economic regulation costs - as described above, while these costs are ultimately net neutral to the charges users pay, they do represent an increase in the CAA Determined Costs.

10.22 In continued support of airspace modernisation in NR23, we will also maintain the AMS Support Fund as part of our Determined Costs. The AMS Support Fund, originally established in its current form in RP3, is intended to provide funding for projects that are important to, or contribute to the successful implementation of, airspace modernisation, but for which there is no other funding mechanism. For NR23 we will retain the same level of funding as RP3, adjusted for inflation.

10.23 In establishing the AMS Support Fund in RP3 we said that unutilised funds will be returned in future reference periods. Given the shortened duration of RP3, we intend to consider RP3 and NR23 AMS Support Fund utilisation together and will return unutilised funds at the end of NR23. If during the course of the period it becomes apparent that the AMS Support Fund is over funded, or is being significantly under-utilised, we will consider pausing collection and if appropriate return the surplus through an in-period adjustment to the CAA Determined Costs.

Table 10.4 CAA NR23 Determined Costs (nominal and 2020 prices)

£m	2022	2023	2024	2025	2026	2027
CAA costs, excluding AMS Support Fund (nominal)	19.3	25.1	25.1	25.4	26.5	26.0
CAA costs, excluding AMS Support Fund (2020 prices)	18.6	21.9	21.5	21.4	21.9	21.5
AMS Support Fund (nominal)	2.2	2.4	2.4	2.5	2.5	2.5
AMS Support Fund (2020 prices)	2.1	2.1	2.1	2.1	2.1	2.1
CAA total Determined Costs (nominal)	21.5	27.5	27.5	27.9	29.1	28.5
CAA total Determined Costs (2020 prices)	20.7	24.0	23.6	23.5	24.0	23.6

Source: CAA

- 10.24 Under the Eurocontrol Principles, the CAA is not subject to traffic risk sharing, however, mindful of the impact of the covid-19 pandemic on the sector, it has decided to recover only its actual costs versus its Determined Costs for 2020.