# UK RP3 CAA Decision Document

CAP 1830

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# Executive Summary

## Context

1. NATS (En Route) plc, known as NERL, is the monopoly provider of en route and certain approach air traffic services in the UK. NERL is subject to economic regulation, which is designed to protect the users of its services and prevent NERL from exploiting its monopoly power.

2. NERL is currently regulated under the European Union Single European Sky performance scheme and the UK Transport Act 2000 and economic licence. The performance scheme provides for the setting of targets and incentives in four key performance areas – safety, capacity, environment and cost efficiency – over five-year regulatory cycles/reference periods.

3. Reference Period 2 (RP2) ends on 31 December 2019. Reference Period 3 (RP3) will run from 1 January 2020 to 31 December 2024. For RP3 we have developed final decisions and a performance plan and targets consistent with EU-wide targets set by the European Commission. Our final decisions also establish cost and service quality measures for NERL's Oceanic regulated activities, which are outside the scope of the performance scheme. We intend to give effect to both our UK and Oceanic decisions through modifications to NERL's economic licence. The performance scheme has a broader scope – as well as safety, service and efficiency targets for NERL, it encompasses cost efficiency targets for the Met Office, the CAA and the Department for Transport for certain activities associated with airspace management and oversight.

4. The Transport Act 2000 sets out duties on both NERL and the CAA. Section 8 of the Act places a duty on NERL, as the licence holder, to provide a safe system for air traffic services. NERL has stated that its main responsibility is to manage and maintain the safety of its operation. Section 2 of the Act sets out our primary duty, to exercise our functions so as to maintain a high standard of safety in the provision of air traffic services. We consider that our decisions on the performance plan and the Oceanic price control will not compromise NERL's ability to maintain the safety of air traffic services. The EU regulations also emphasise the importance of safety.

5. A key strategic driver for NERL in RP3 is to support the implementation of the UK's Airspace Modernisation Strategy, which is intended to deliver a once in a generation upgrade to modernise critical national infrastructure and deliver a broad range of benefits in all key performance areas and more widely. We consider this national strategic objective is fundamental to furthering the interests of airspace users and therefore a key priority for RP3. Nonetheless, the systems

that users have already funded over RP2 and the further systems and airspace changes that NERL plan to implement and coordinate over the RP3 should allow both for airspace modernisation and significant improvements in NERL's operational performance. We expect NERL to be able to deliver significant operational efficiencies during the latter stages of the RP3 period and for the RP4 period. We are expecting that users further share in the benefits of these efficiencies at the RP4 review.

6. NERL will need to respond flexibly to the challenges of RP3 and remain accountable for continuing to deliver its service to a high standard, in order to justify the revenue it receives as the monopoly service provider. NERL's customers place a high value on a safe and reliable service, and we will continue to monitor and enforce NERL's licence obligations on this basis.

7. If, in due course, NERL accepts our final decisions, including the performance plan and the associated licence modifications that give effect to this plan, it should only do so on the basis that it is taking responsibility and accountability for providing an appropriately high quality of service to airlines and their passengers. In practice, this means NERL meeting all its statutory duties and obligations with respect to service quality, which involve providing a high quality (but not necessarily uniform) experience for the users of its services. We will also hold NERL accountable for fully discharging its key role in the delivery of airspace modernisation and all aspects of its performance plan. Nonetheless, NERL's focus in delivering these outcomes and outputs should always be in the context of its over-riding obligations to maintain and/or improve safety.

8. On the other hand, if NERL were not to accept our final decisions on the above matters, we would expect to make a reference to the Competition and Markets Authority for them to investigate and report on whether our decisions for NERL operate against the public interest or may be expected to do so, and if so, whether this could be remedied or prevented by modifying our decisions.

9. In these final decisions we have provided for various flexibility measures to allow NERL to respond to the uncertainties in RP3 and play a leading role in the delivery of airspace modernisation. If there are changes in wider circumstances such that there is evidence that this flexibility is not sufficient to allow efficient delivery by NERL in a way consistent with the interests of users, we would review and seek to revise our decisions and performance plan, as appropriate.

10. Our final decisions follow a programme of consultation and engagement with interested stakeholders including NERL and airspace users. In February 2019 we consulted on draft proposals and stakeholder feedback was mixed. NERL and employee representatives said that our efficiency proposals were too ambitious and would have an impact on NERL's ability to deliver both its day to day service, while maintaining systems resilience and play its role in airspace modernisation. Airspace users were largely supportive of our UK en route

proposals but objected to our proposal to allow NERL to implement satellite-based surveillance service for the North Atlantic due to concerns about NERL's forecasts of costs and whether the costs might exceed the benefits of these arrangements. A summary of stakeholder feedback to our draft proposals, with references to where we have addressed this in our final decisions, will be published as CAP 1830c in September 2019.

## Our approach to setting NERL's price control

11. Historically NERL has delivered strong performance and been able to achieve efficiencies while delivering a high level of service. In making proposals for the RP3 period, we have assumed that NERL will continue to be able to make efficiency savings in line with historical performance over the medium term. We have also recognised the importance of NERL continuing to deliver its ongoing airspace and technology programme to deliver airspace modernisation, as this should enable very significant longer term benefits and efficiencies.

12. We recognise the significant change and uncertainty ahead in RP3. We consider that NERL's high level plans to upgrade its legacy technology system and for airspace modernisation are both important and desirable for UK aviation, and have provided important strategic context for the development of the UK performance plan. We have considered how to facilitate the successful delivery of these high level plans as part of our final decisions and sought to ensure there are mechanisms that will allow flexibility (and provide appropriate protection to users) to support these changes. We have also allowed for cost increases at the end of RP2, as well as NERL's forecast operating costs for the first part of RP3, which should provide a strong basis for airspace modernisation work that will take place through RP3 and allow NERL to deliver a more resilient service. Notwithstanding these cost increases, these final decisions should mean that the average level of unit rate for NERL's services across RP2 falls by 22% for RP3.

### Governance and delivery

13. Recognising NERL's privileged position as a monopoly provider of nationally vital services, and the need to earn the confidence of all relevant stakeholders, as part of our final decisions we have sought to reinforce governance arrangements around NERL's customer engagement and capital expenditure plans. RP3 provides an opportunity for NERL and airspace users to take more ownership of the programme and establish a robust process for meaningful engagement on important decisions on capital expenditure.

14. Bearing in mind the cost allowances we have made as part of these final decisions and our inclusion of flexibility mechanisms, airspace users can reasonably expect that NERL plays its full part in driving forward UK airspace modernisation and delivers its full programme effectively and efficiently. To further the interests of users with respect to these matters we have decided to

introduce a new financial incentive on NERL's delivery of its capital expenditure programme and support for airspace modernisation. We will carry out a broad assessment of NERL's capital expenditure delivery, supplemented by a focus on the delivery of specific milestones for programmes or projects that lead to important outcomes, linked to airspace modernisation, that benefit users. This assessment will be reasonably flexible and the intention is not that NERL mechanistically delivers programmes that have become uneconomic because of changing circumstances, but we will assess whether it has effectively delivered (to the fullest extent practical and desirable) the programmes necessary to facilitate airspace modernisation. If NERL does not effectively deliver this programme we will look to make a reduction to their revenue in RP4, or a downward adjustment to its RP4 regulatory asset base, of up to £36 million.[1]

## NERL's costs

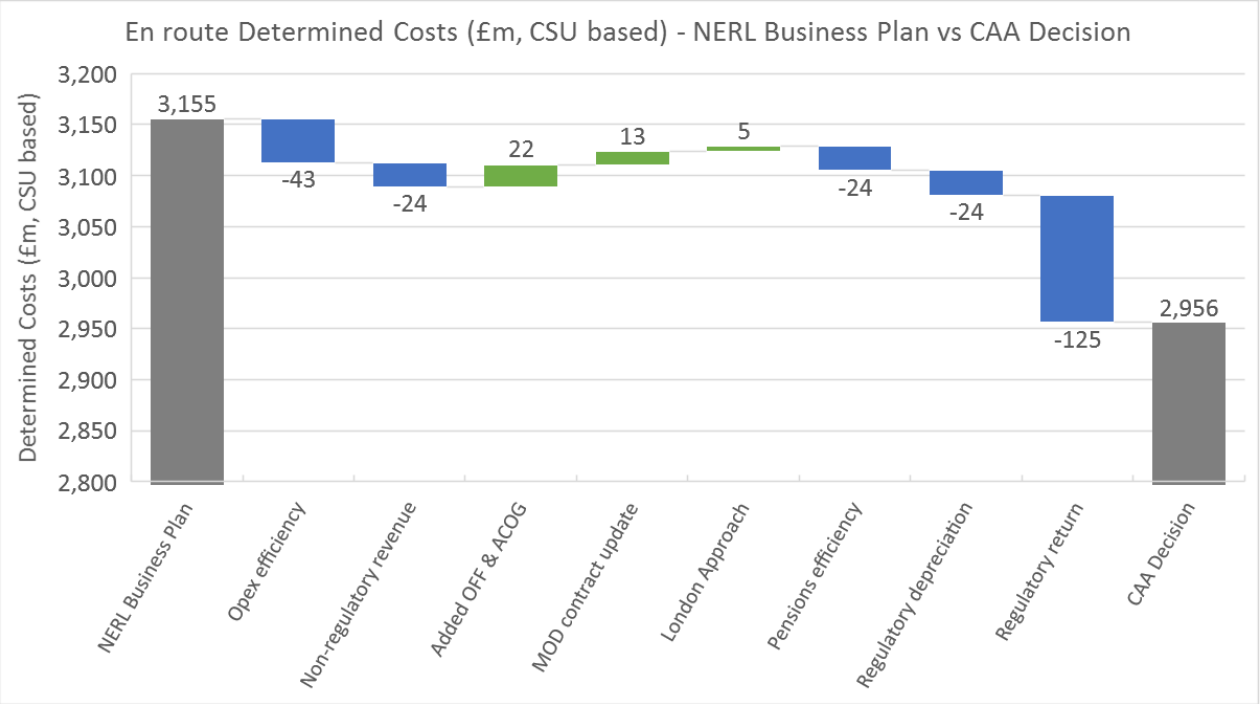
15. As well as NERL's RP3 business plan, in coming to our proposals we have considered a range of evidence and inputs including:

- historical analysis/trends (top down analysis);
- independent in-depth consultant studies (bottom up analysis);
- the results of NERL's customer consultation process, including the Co-Chairs' Report and bilateral meetings with airspace users;
- the EU targets adopted by the European Commission; and
- our own stakeholder consultation process on our draft proposals.

16. NERL's UK en route activities account for the largest component of UK Determined Costs, which are addressed in chapter 5. The chart below[2] illustrates the main impacts of our final decisions on NERL's Determined Costs, compared with NERL's business plan.

1 Unless otherwise stated, all financial figures throughout the document are in £2017 CPI prices

2 The chart shows Determined Costs on a CSU basis. The performance regulation establishes unit costs using Total Service Units, which includes military and exempt flights which are funded separately. Where we express Determined Costs on a TSU basis for the performance regulation, we make an adjustment to Determined Costs of £33m to account for the difference in CSUs and TSUs. This means Determined Unit Costs are neutral on a CSU and TSU basis. See chapter 6 for further details.




Source: CAA

17. **Operating costs.** NERL's operating costs will be £43 million lower than NERL's projections in RP3 overall (this compares to £71 million in our draft proposals). We have allowed additional operating costs to provide more flexibility and ensure NERL has sufficient resources to effectively deliver its planned RP3 programme, in particular its role airspace modernisation. We have accepted NERL's forecast that its operating costs will increase by about 21% in the last two years of RP2 as well as its forecast operating costs for the first three years of RP3.

18. **Non-regulatory revenue.** We have reduced our forecast increase in non-regulatory revenue to £24 million (this compares to £49 million in our draft proposals) and applied this to operating costs. We have also updated non-regulatory revenue for the Ministry of Defence contract, changes in London Approach due to our operating cost proposals and the addition of Biggin Hill to the London Approach service. We have made these changes to reduce the risk that the forecast reductions in NERL's non-regulated activities will reduce the resources available to deliver airspace change.

19. **ACOG and OFF.** To provide additional flexibility to support NERL's programme delivery, in particular where there remain elements of uncertainty of what might be required, or where it is necessary for them to provide more detail, we have added a further £7 million to the Opex Flexibility Fund (OFF), increasing it from £35 million in our draft proposals, to £42 million. We expect the fund to be utilised primarily to support NERL's airspace modernisation activities and will be subject to a stakeholder governance and escalation process. We have also added £15 million over RP3 for the establishment and running of the Airspace

Change Organising Group (ACOG) function (our draft proposals had not provided funding for these arrangements).

20. **Pensions.** We have reduced by half, to £18 million, the adjustment we made in our draft proposals to NERL's forecast of pension deficit repayments. This reflects the new evidence that NERL has provided on its pension position at the end of March 2019 that suggests that the likelihood of a surplus arising in RP3 has reduced. We have also made changes associated with our adjustments to operating costs. Ultimately, customers will only fund the actual pension deficit repayments made, as the regulatory framework provides for a passthrough where differences between actual and forecast deficit levels arise as a result of changes in financial market conditions.

21. **Capital expenditure/depreciation.** We have made no changes to our draft proposals in respect of capital expenditure, maintaining the allowance at £667 million (about £50 million below NERL's business plan) reflecting our view that NERL can realise capital expenditure efficiencies over RP3 but continue to deliver its full business plan programme. Our assumptions on capital expenditure drive about a third of the £24 million reduction in regulatory depreciation, with the remainder being a result of changes to inflation forecasts. We note that we are retaining the cost pass-through arrangements for capital expenditure and so if it is necessary for NERL to spend more than we have allowed then additional allowances for efficient costs will be made at RP4.

22. **Regulatory return.** Our final decision uses a real pre-tax Weighted Average Cost of Capital of 2.91%, compared to 2.84% in our draft proposals and 5.07% in NERL's business plan. The slight increase in our final decision is due to updates to our estimates of NERL's debt beta for new information. Our lower cost of capital, compared to NERL's business plan, drives the single largest reduction (£125 million) in Determined Costs.

23. The **overall impact** of our changes is to reduce NERL's Determined Costs by £200 million compared to their business plan (£100 million less than our draft proposals). The additional flexibility created will enable NERL to play its role in airspace modernisation; results in average Determined Unit Costs of £45.46, compared to £49.85 in NERL's business plan; is consistent with the EU cost efficiency target; and provides for lower prices over the period, which in real terms will be an average of 22% lower in RP3 compared to RP2. Nonetheless, we will hold NERL fully accountable for playing a leading role in the delivery of airspace change and providing high quality services consistent with its licence and Transport Act obligations.

## Interdependencies

24. We are clear that safety must always be protected and that air traffic will be constrained where necessary to ensure this. NERL's operations are, and should

continue to be safe in RP3, because the current levels of operational safety, NERL's effective safety management of change and the existence of appropriate safety governance mechanisms. Our safety specialists have undertaken an interdependencies assessment and are assured that there are appropriately robust regulatory measures and processes in place such that safety will not be compromised by our decisions on the other key performance areas.

25. In respect of interdependencies between service quality and costs we have sought to make appropriate efficiency assumptions while also providing strong support for the delivery of airspace modernisation, and further airspace users' interests. We have allowed all the capital expenditure NERL has requested for its role in airspace modernisation (£115 million) and ringfenced other airspace modernisation-specific operating costs (£42 million for the NERL Opex Flexibility Fund and £15 million for the Airspace Change Organising Group) from our efficiency challenge. With respect to wider costs we have also proposed costs increases in our own airspace-related costs to ensure we are equipped to fulfil our own airspace modernisation related duties and functions.

26. We have also sought to ensure that we maintain as much flexibility as practicable (within the constraints of the legal frameworks) by designing mechanisms that will support delivery of airspace modernisation. In addition to the Opex Flexibility Fund, we also proposed to establish an airspace modernisation support fund within the CAA cost allowances of £10 million (see chapter 6 on CAA costs and chapter 9 on uncertainty mechanisms). For both funds, expenditure will be subject to enhanced governance arrangements and, where not utilised, the funds will be returned to airspace users in the future.

27. We have assessed whether NERL will be able to finance its activities on the basis of our decisions on its performance plan for RP3 and tested the impact of plausible downside scenarios. These assessments suggest that our decisions on RP3 are consistent with our statutory duty to ensure that NERL should not find it unduly difficult to finance its activities. On this basis there should not be a constraint on NERL financing efficient investment, including to support airspace modernisation. See chapter 7 for further information on these matters.

28. In determining our approach to capacity and flight efficiency targets, we have taken account of the EU-wide targets, the outcomes of the consultation programme between NERL and their customers, the reference values provided by the Eurocontrol Network Manager, historical performance and stakeholder responses to our own consultation activities – all in the context of providing sufficient flexibility to support airspace modernisation.

## Summary of other key aspects of our decisions

29. Our final decisions, along with our supporting rationale, are set out in individual chapters covering each key performance area. Additional detailed supporting

information is provided in the appendices. A high-level summary of our key proposals is provided below.

## Safety

30. The performance regulation establishes a single safety Key Performance Indicator (KPI) for RP3:

*The minimum level of the effectiveness of safety management (EoSM) to be achieved by air navigation service providers certified to provide air traffic services. This KPI measures the level of implementation of the following safety management objectives: (a) safety policy and objectives; (b) safety risk management; (c) safety assurance; (d) safety promotion; (e) safety culture.*

31. The UK target is that by the end of 2024, NERL must achieve as a minimum at least Level C in the safety management objectives 'safety culture', 'safety policy and objectives', 'safety assurance', 'safety promotion'; and at least Level D in the safety management objective 'safety risk management' for Effectiveness of Safety Management. This decision is consistent with the EU-wide targets.

32. NERL has also stated it would set more challenging internal safety targets. We support NERL including these steps as part of its business plan. See chapter 2 for more detail on safety in the context of the performance scheme.

## Environment

33. The performance regulation prescribes one environmental KPI for RP3 – the horizontal en route flight efficiency of the actual trajectory, referred to as KEA. Our KEA target assumes NERL will match historical performance for the first three years of RP3 but will be able to deliver greater levels of performance with the implementation of free route airspace later in the period. Consistent with the approach we adopted at RP2, we have not proposed a financial incentive for KEA as NERL's contribution to flight efficiency is better captured by the additional KPI discussed below.

**Table 1: KEA target**

| | RP2 | | | | | RP3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** |
| UK actual | 3.93% | 4.38% | 4.15% | 4.08% | | | | | | |
| EC reference value | | | | 4.08% | | 3.53% | 3.39% | 3.25% | 3.25% | 3.25% |
| RP3 final target | | | | 4.08% | 4.05% | 4.06% | 4.05% | 4.04% | 3.88% | 3.72% |
| No financial incentive | | | | | | | | | | |

Source: CAA

34. The regulation also allows for the establishment of additional environmental KPIs. Since RP1 (2012) the UK has set a target for a domestic environment KPI that considers both vertical and horizontal flight (in)efficiency, referred to as 3Di. We have applied the expected efficiency from performance data to date for 2019, rather than using RP2 target values. This reflects a modest performance improvement against targeted RP2 performance. As with RP2, we have established a financial incentive for 3Di, albeit at lower levels than our draft proposals. See chapter 3 for details on environment.

**Table 2: 3Di target**

| | RP2 | | | | | RP3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** |
| UK actual | 29.5 | 29.7 | 29.0 | 28.6 | N/A | | | | | |
| RP2 target/draft proposal[3] | 29.1 | 28.6 | 28.3 | 27.5 | 27.1 | 26.8 | 26.5 | 26.2 | 25.9 | 25.6 |
| RP3 final target | | | | | | 27.8 | 27.5 | 27.3 | 27.0 | 26.7 |
| Maximum penalty 0.5% of Determined Costs; maximum bonus 0.5% of Determined Costs | | | | | | | | | | |

Source: CAA

## Capacity

35. The EU framework prescribes one en route capacity KPI for RP3 – the average minutes of en route air traffic flow management delay attributable to air navigation services, referred to as C1. This target can be adjusted for certain categories of delay when applying a financial incentive, with this adjusted target determined as a fixed percentage of C1 and referred to as C2. Consistent with RP2 we have applied a financial incentive to C2.

**Table 3: Proposed ATFM minutes of delay per flight target**

[3] The par value for RP2 has been adjusted downwards by 0.6 to reflect the exclusion of various types of non-revenue flights.

| ATFM delay minutes/flight | RP2 | | | | | RP3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| C1 RP2 target/draft proposal | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| C1 NOP reference values | | | | | | 0.34 | 0.34 | 0.30 | 0.26 | 0.27 |
| C1 target | | | | | | 0.26 | 0.32 | 0.32 | 0.30 | 0.32 |
| C2 actual | 0.04 | 0.21 | 0.10 | 0.21 | N/A | | | | | |
| C2 RP2 target/draft proposal | 0.17 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| C2 target | | | | | | 0.20 | 0.25 | 0.25 | 0.23 | 0.25 |
| Maximum penalty 0.25% of Determined Costs; maximum bonus 0.05% of Determined Costs | | | | | | | | | | |

Source: CAA

36. In our final decision we have re-profiled C1 (and derived targets) to better reflect expected delays as a result of NERL's planned airspace/technology programmes. The re-profiling is neutral in terms of total number of allowed minutes delay over RP3.

37. The regulation also allows for the establishment of additional capacity KPIs. We have set two additional capacity targets, referred to as C3 and C4, designed to focus on specific elements of delay that are important to users – the time of day and duration of delays, as well as significant systems outages. See chapter 4.

### Oceanic activities

38. In addition to our main conclusions, our decisions for NERL's Oceanic regulated activities, which are not in scope of the performance scheme, remain broadly the same as in our draft proposals. We have retained our approach to building blocks and the satellite-based surveillance data charge and updated for latest traffic forecasts. These are addressed in chapter 11.

## Overall level of Determined Costs

39. Chapter 6 sets out our overall UK Determined Costs and Determined Unit Cost target. Our UK cost efficiency target final decision is an average reduction of Determined Unit Cost of 3.5% per year. This compares to the Performance Review Body's proposed EU-wide cost efficiency target of an average 4.1% reduction of Determined Unit Cost per year, and the finally adopted EU-wide cost

efficiency target of an average 1.9% reduction in Determined Unit Cost per year.[4] Our proposed UK Determined Costs include £86 million of flexibility and support funds, the use of which are subject to additional governance and which if not utilised will be returned to airspace users in future reference periods.

**Table 4: Proposed UK's Determined Costs for RP3**

| 2017 prices £m | 2019 Base | 2020 | 2021 | 2022 | 2023 | 2024 | CAGR 2019 to 2024 |
|---|---|---|---|---|---|---|---|
| NERL | 626.3 | 637.4 | 609.7 | 610.3 | 569.8 | 561.3 | -2.2% |
| MET | 25.5 | 29.1 | 27.8 | 28.6 | 31.1 | 30.7 | 3.8% |
| NSA & DFT | 64.0 | 66.2 | 66.9 | 66.7 | 66.6 | 66.8 | 0.9% |
| UK | 715.7 | 732.7 | 704.4 | 705.5 | 667.6 | 658.8 | -1.6% |

Source: CAA calculations. Determined Costs are shown on a TSU basis so include an uplift of £33m for MOD and exempt flights

**Table 5: UK Determined Unit Cost (DUC) target**

| 2017 prices £m | 2019 Base | 2020 | 2021 | 2022 | 2023 | 2024 | CAGR 2019 to 2024 |
|---|---|---|---|---|---|---|---|
| NERL | 50.47 | 50.39 | 47.30 | 46.29 | 42.51 | 41.23 | -4.0% |
| MET | 2.05 | 2.30 | 2.16 | 2.17 | 2.32 | 2.26 | 1.9% |
| NSA & DFT | 5.15 | 5.24 | 5.19 | 5.06 | 4.97 | 4.91 | -1.0% |
| UK | 57.68 | 57.93 | 54.64 | 53.52 | 49.80 | 48.39 | -3.5% |

Source: CAA calculations

## Next steps

40. The performance regulation requires that Member States adopt draft national performance plans and submit them to the European Commission three months before the start of the Reference Period. Alongside our final decisions document, we have completed the performance plan template. We will publish both on our website and send to the DfT by 1 September 2019.

[4] COMMISSION IMPLEMENTING DECISION (EU) 2019/903 of 29 May 2019 setting the Union-wide performance targets for the air traffic management network for the third reference period starting on 1 January 2020 and ending on 31 December 2024

41. It is for the DfT to consider the performance plan and make a submission to the European Commission on these matters by 1 October 2019.

42. The European Commission has until 1 November 2019 to verify that the performance plan contains the required information; and a further four months (until 1 March 2020) to assess all Member States' plans and reach a decision.

43. Our decision in respect of NERL's Oceanic activities is not in scope of the performance regulation or UK performance plan – no further EU or DfT assessment or decision is required.

44. If NERL accepts our decisions, it is with the commitment that it is taking responsibility and accountability for delivering its plan in full and providing a high quality of service to airlines and their passengers. If NERL does not accept our decisions, we expect to make a reference to Competition and Markets Authority in respect of section 12 of the Transport Act 2000.

45. We set out in Appendix H draft licence modifications to implement our decisions. Subject to any reference, we will conduct statutory consultation on our proposed modifications before the end of the year.

Chapter 1

# Introduction and background

## Purpose of this document

1.1 This document sets out the CAA's final decisions in respect of the economic regulation of NATS (En Route) plc, referred to as NERL, for the period January 2020 to December 2024 – Reference Period 3 (RP3). It contains targets, incentives and associated requirements for NERL, that will form the basis of the price controls for their "En route (UK) Area" and "En route (Oceanic) Area" activities under their air traffic services licence, issued by the Secretary of State, under the Transport Act 2000 ('the Transport Act').

1.2 The decisions are consistent with and applicable to the NERL components of the UK performance plan, required under EU's Single European Sky (SES) performance scheme for air navigation services (ANS) for RP3 – the detailed requirements of which are contained in the RP3 performance and charging regulation (the 'performance regulation').[5] This document provides supplementary information to the accompanying UK performance plan, which we have prepared in our role as the UK national supervisory authority (NSA) under the EU's SES legislation.

1.3 The European and domestic regulatory framework, including our statutory duties, and scope of the performance plan are set out in Appendix B.

1.4 We note that this decision covers all of NERL's regulated activities, including the Oceanic service. While this is not in scope of the SES performance framework and is regulated under the Transport Act, the regulatory periods are aligned and (where appropriate) we have made similar assumptions in setting the Oceanic and UK en route price controls.

## UK context and assumptions

### Airspace modernisation

1.5 In addition to our European and domestic statutory duties, the key strategic consideration in making our final decisions for the performance plan for RP3 is airspace modernisation. In February 2017 the Government set out its strategic rationale for modernising airspace, and the consequences of not doing so. We

[5] Commission Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the single European sky and repealing Implementing Regulations (EU) No 390/2013 and (EU) No 391/2013.

expect airspace modernisation to deliver major benefits, through the introduction of technology that will allow: more efficient flight paths that can increase capacity; an approach to establishing flight paths that takes into account the advantages of reducing noise for local communities; more carbon efficient routes and reduced delays for passengers. For instance, we would expect to see a large reduction in planes queueing in holding stacks over the UK, with any remaining stacks operating at higher altitudes.

1.6 Airspace modernisation is being delivered by the aviation industry. In our business plan guidance to NERL,[6] we were clear that as the licensed monopoly provider of (air traffic) services that are of national importance NERL would have a key role in supporting the development and implementation of airspace modernisation. The DfT and the CAA have committed to co-sponsor airspace modernisation to support this delivery, including through setting the overall strategy and governance for the programme.

1.7 In October 2017, the Government tasked the CAA with a key oversight role for airspace modernisation. Consistent with our role as specialist aviation regulator and our statutory responsibilities, we are required to prepare and maintain a coordinated strategy and plan for the use of UK airspace for air navigation up to 2040, including for the modernisation of the use of such airspace.

1.8 The Government confirmed its support and objectives for the modernisation of UK airspace in its December 2018 Green Paper,[7] which was published in preparation for its forthcoming Aviation Strategy. Alongside this, in December 2018, we published our UK Airspace Modernisation Strategy (AMS),[8] setting out the detailed initiatives that industry must deliver to achieve the objectives envisaged in current government policy. We also committed to setting up a new governance structure and a CAA oversight team to monitor industry delivery.

1.9 As part of our strategy and plan, the DfT and CAA (as co-sponsors of airspace modernisation) commissioned NERL to begin to develop a co-ordinated implementation plan for airspace changes (or airspace change masterplan) in the south of the UK, and to create a co-ordination group (now known as the Airspace Change Organising Group (ACOG)) to lead the airspace change implementation plan.

1.10 In our draft proposals we stated our intention underpin these requirements with an obligation on NERL through its licence, as part of the wider package of licence modifications implementing the UK's RP3 performance plan.

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6 CAP 1625 - Guidance for NERL in preparing its business plan for Reference Period 3 (January 2018)

7 https://www.gov.uk/government/consultations/a-new-aviation-strategy-for-the-uk-call-for-evidence

8 CAP 1711 - Airspace Modernisation Strategy (December 2018)

1.11 Our final RP3 decisions maintain this requirement. Appendix H contains a draft new licence condition, setting out our expectations of NERL in respect of airspace modernisation. This will help NERL to understand what the airspace modernisation co-sponsors expect of it and will help clarify how it is accountable for delivery. Not only will it provide formal mechanisms and powers to support our oversight of NERL's role in airspace modernisation, it will also clearly signal and set out NERL's responsibilities to other stakeholders.

1.12 The draft condition requires NERL to establish, maintain and manage ACOG, and create and maintain a masterplan for airspace changes in Southern England, in line with requirements or guidance provided by the co-sponsors and taking into account the expertise of airport operators and views of stakeholders. It also requires NERL to prepare and submit changes to airspace design and airspace change proposals (ACPs) we instruct them to, and, where necessary, assist other stakeholders with preparing and submitting ACPs.

1.13 Under the current regulatory and policy framework, there is no way of compelling sponsors to prepare an ACP and to submit it to the CAA for a decision. This means that when airspace modernisation is needed across a number of airports to restructure and rationalise the airspace they use, there is no way of ensuring that each airspace change sponsor will make the changes identified as necessary. Where there are interdependencies between changes, this may delay modernisation. The DfT considered this issue after consulting on policy proposals in its Aviation Strategy Green Paper and a policy decision is expected later this year.

## Brexit

1.14 As we prepare our final decisions and the performance plan, it is not clear what the nature of the UK's future relationship with the EU will be. Our approach and conclusions were developed on the basis that the SES performance framework would continue to apply to the UK on the 1 January 2020. If no future arrangements are established before the end of 2019, the economic regulation of NERL will default to the Transport Act. Under both the EU and domestic regulatory frameworks the substantive requirements are similar – we produce a price control and service quality targets that go towards achieving the strategic outcomes established in CAP 1511,[9] and these need to be in place by 1 January 2020. If a 'no-deal' Brexit does occur, our final decisions and associated licence modifications would stand, regardless of the status of the performance plan. We will continue to monitor the status and development of future of EU-UK aviation

[9] CAP 1511 - Strategic outcomes for the economic regulation of NERL 2020-2024: discussion document (April 2017).

arrangements and how they relate to our final decisions as we approach the start of RP3, and seek to make changes where appropriate.

## Traffic assumptions

1.15 Our draft proposals were based on the STATFOR[10] October 2018 base case medium-term forecasts for en route traffic, although we said that we would consider updated forecasts, alongside stakeholder consultation responses in coming to our final conclusions.

1.16 Airlines expressed broad support for our proposal to use the STATFOR base-case traffic for RP2. NERL, PCS and Prospect considered the NERL forecast more accurate and raised concerns with using the (higher) STATFOR forecast.

1.17 There have been several developments around traffic forecasts since our draft proposals were published, including:

- NERL issued an updated December 2018 forecast, and submitted it with its consultation response;
- STATFOR published its February 2019 medium-term forecast;
- NERL issued an update to its December 2018 forecast, dated May 2019;
- STATFOR published its May 2019 short-term forecast (covering only the first year of RP3); and
- Eurocontrol's Central Route Charges Office (CRCO), responsible for billing en route charges, issued a short-term forecast based on STATFOR's May 2019 release. This contained updates for changes in the way the distance factor, which underpins the TSU forecast,[11] is calculated in accordance with the new requirement in the performance regulation for RP3.

1.18 The NERL (May 2019) and STATFOR (February 2019) forecasts are not significantly different, with NERL's flights forecast 1.0% above STATFOR's for the RP3 period, and NERL's TSU forecast 0.9% below that of STATFOR. We have considered the advantages and disadvantages of each forecast with the intention of using the one that is more plausible. A high-level comparison is provided in Appendix C.

1.19 Table 1.1 compares the NERL (May 2019) and STATFOR (February 2019) forecasts. All else being equal, in a capacity-constrained environment as expected for the UK in RP3, the NERL model would be expected to produce

[10] A team within Eurocontrol that provides statistics and forecasting services.

[11] Calculation of Total Service Units in covered in Annex VIII of the Performance Regulation. En route service units are the product of the distance factor and the weight factor. Unlike RP2, the distance factor from RP3 will be based on actual route flown rather than planned.

higher traffic forecasts. However, for RP3 as a whole, STATFOR's forecast for TSU is 0.9% higher than NERL's forecast.

**Table 1.1: Comparison of NERL and STATFOR traffic forecast**

| | Source | 2018 A | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | RP3 |
|---|---|---|---|---|---|---|---|---|---|
| Overall UK flights (000) | STATFOR | 2,558 | 2,600 | 2,649 | 2,685 | 2,737 | 2,771 | 2,802 | 13,645 |
| | NERL | 2,558 | 2,581 | 2,630 | 2,693 | 2,760 | 2,827 | 2,866 | 13,776 |
| TSU (000) | STATFOR | 12,194 | 12,408 | 12,648 | 12,891 | 13,183 | 13,406 | 13,615 | 65,743 |
| | NERL | 12,194 | 12,299 | 12,391 | 12,701 | 13,043 | 13,380 | 13,636 | 65,150 |

Source: NERL and STATFOR

Note: To enable like-for-like comparisons between NERL and STATFOR forecasts, the NERL forecasts presented have been derived by applying NERL forecast traffic growth to the STATFOR 2018 actuals data – see Appendix C.

1.20 In summary, the main factors considered in our analysis of both forecasts are:

- the treatment of excess demand when airports become constrained;
- the 2019 starting point which represents the baseline for the 2020-2024 forecast, and how actual growth compares to assumptions;
- assumptions used for calculating the distance factor, including the positioning of the jet stream over the North Atlantic which significantly influences distances flown by transatlantic flights;
- method and assumptions used for calculating the aircraft weight factor, including how aircraft weight growth has been taken into account;
- economic assumptions underpinning the forecasts, including GDP forecasts and the impact of Brexit; and
- the change in method for calculating the distance factor, to reflect that RP3 is based on actual distances whereas RP2 was based on planned distances.

1.21 When taking these factors into account, we considered STATFOR's forecast to be the better one to use, particularly because of the greater accuracy to date. The independence of STATFOR was an additional factor we took into account.

1.22 To the extent that actual traffic varies from forecasts, there are in-built mechanisms in the performance framework to share traffic risk and the associated costs and benefits between NERL and airspace users.[12] If the

[12] See chapter 9 – Uncertainty mechanisms

variance triggers alert mechanism thresholds, NSAs may review the performance plans and, where appropriate, propose new targets.

1.23 Our final decision is to use the STATFOR February 2019 base-case forecast.

# Process

## Process to date

1.24 Following publication of a discussion document on our strategic outcomes for NERL for RP3,[13] we consulted on[14] and then published business plan guidance[15] to NERL in January 2018, setting out our expectations for NERL's RP3 business plan and consultation with its customers.

1.25 NERL shared an initial business plan with airspace users in April 2018, which it followed with a programme of customer consultation on its proposals, from May to September 2018. At the end of the programme, the Co-Chairs of the Customer Consultation Working Group (CCWG) submitted a report on their conclusions.[16] NERL published a revised RP3 business plan at the end of October 2018.[17]

1.26 In addition to our own analysis and assessment, we commissioned a number of consultancy studies to provide independent in-depth analysis and advice on certain issues, to inform our draft proposals and final decisions. These studies are published on our website:

- Components of cost of capital – Europe Economics
- Comments on NERA/NERL critiques of cost of capital analysis – Europe Economics
- Responses to stakeholder comments on cost of capital - PwC
- Operating and capital costs – Steer/Helios
- Pensions – the Government Actuary's Department (GAD)
- Review of further evidence provided by NERL - GAD

13 CAP 1511 - Strategic outcomes for the economic regulation of NERL 2020-2024: discussion document (April 2017)

14 CAP 1593 - Guidance for NERL in preparing its business plan for Reference Period 3: Consultation document (September 2017)

15 CAP 1625 - Guidance for NERL in preparing its business plan for Reference Period 3 (January 2018)

16 RP3 Customer Consultation Working Group Report of the Co-Chairs (October 2018)

17 NERL RP3 business plan 2020-2024 (October 2018) and appendices

- Cost allocation and non-regulated revenue – Cambridge Economic Policy Associates (CEPA)
- Financial model assurance for draft proposals – Grant Thornton
- Updated financial model assurance for final proposals – Grant Thornton
- Review of Service and Investment Plan (SIP) process – Chase Partners

1.27 In addition to the NERL-focussed process, the Met Office has developed and consulted on its RP3 business plan proposals, which was supported by a stakeholder consultation meeting in September 2018.[18]

1.28 We published our draft performance plan proposals in February 2019. We undertook an eight-week consultation period, which included bilateral and multilateral meetings with stakeholders.

1.29 At the end of the consultation period we received ten written submissions from stakeholders. These are published on our website. A summary of stakeholder feedback to our draft proposals, with references to where we have addressed this in our final decisions, will be published in due course.

1.30 As previously stated, a key strategic consideration for the development of our RP3 decisions has been to support the AMS. The strategy and associated policy was developed through 2017 and 2018, before a process of public engagement ahead of being finalised and published in December 2018.[19] We have taken account of the development of the strategy as we have developed our RP3 decisions.

## EU targets

1.31 The performance regulation requires that national targets are consistent with EU-wide targets. The European Commission (the Commission) adopted the RP3 Union-wide performance targets on 29 May 2019.[20]

1.32 As the Commission's EU targets were not available at the time we published our draft proposals for consultation, where possible we have used the PRB's EU target proposals to provide context for our draft decisions.

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18 https://www.metoffice.gov.uk/aviation/our-responsibilities-to-aviation

19 CAP 1711 – Airspace Modernisation Strategy (December 2018)

20 COMMISSION IMPLEMENTING DECISION (EU) 2019/903 of 29 May 2019 setting the Union-wide performance targets for the air traffic management network for the third reference period starting on 1 January 2020 and ending on 31 December 2024

## NERL licence modifications

1.33 To give effect to the NERL UK and Oceanic final decisions under the Transport Act, it is necessary to modify a number of conditions contained in the NERL licence. Table 1.2 below lists the key conditions we propose to modify to implement our RP3 decisions. Associated draft modifications are set out in Appendix H.

**Table 1.2**

| Condition | Modification |
|---|---|
| 10 | Service and Investment Plan<br><br>Independent reviewer<br><br>Capital expenditure delivery incentive |
| 10a | New condition on airspace modernisation |
| 21 | UK en route price control, including determined costs, service quality targets and incentives |
| 21a | London Approach price control |
| 22 | Oceanic price control |

1.34 To give effect to the licence modifications, the Transport Act requires that NERL must give their consent and we must conduct a 28-day statutory consultation. If NERL does not consent, we expect to make a reference to the Competition and Markets Authority (CMA).

1.35 If we wish to change the targets contained in the performance plan as a result of a reference to the CMA, we may (in conjunction with the DfT) seek to revise our targets under Article 18 of the performance regulation.

## Structure of this document

1.36 The remainder of this document is structured as follows:

- Chapters 2, 3 and 4 set out our final decisions for NERL's outputs in respect of Safety, Environment and Capacity, including – where appropriate – financial incentives;
- Chapter 5 explains our efficiency challenge for NERL's en route Determined Costs and Chapter 6 sets out our final decisions on the overall UK cost efficiency target, as well as DfT, MET and CAA Determined Costs;
- Chapter 7 discusses financeability issues, including our approach to the RAB, regulatory depreciation and NERL's cost of capital, which are key revenue building blocks in the calculation of NERL's price control;

- Chapter 8 sets out our final decisions for the London Approach service, including the scope of the London Approach charge;
- Chapter 9 sets out our approach to addressing uncertainty during RP3, including traffic and costs risk sharing, as well as funds and regulatory mechanisms to support airspace modernisation;
- Chapter 10 addresses terminal ANS; and
- Chapter 11 sets out our final decisions for the Oceanic price control.

1.37 Appendices providing detailed supporting information, are provided in a separate document – CAP 1830a.

1.38 Unless otherwise stated, all financial figures throughout the document are stated in 2017 CPI prices.

Chapter 2

# Safety

Our final decisions reflect the overriding importance of safety and:

- NERL shall meet fully the EU-wide safety targets:
- Level C in the safety management objectives 'safety culture', 'safety policy and objectives', 'safety assurance' and 'safety promotion'; and
- Level D in the safety management objective 'safety risk management'.
- NERL should also establish the more ambitious internal aspirational safety targets as discussed in its RP3 business plan.

## Introduction

2.1 Safety is the overriding objective under the performance scheme and Member States must have regard to safety when developing performance plans.

2.2 Section 8 of the Transport Act also places duties on NERL including to ensure that a safe system for the provision of authorised air traffic services in respect of a licensed area is provided, developed and maintained. We have a primary duty under section 2 of the Transport Act to exercise our functions so as to maintain a high standard of safety in the provision of air traffic services. We consider that our performance plan decisions meet this duty and enable NERL to continue to maintain a safe service.

2.3 This chapter:

- summarises the approach to aviation safety in the UK;
- sets out the requirements under the performance regulation regarding safety, including the KPI against which NERL's safety performance will be monitored and the EU-wide targets;
- summarises our draft proposals and stakeholder responses for the safety KPI; and
- sets out our final conclusions and decision on the RP3 safety KPI target and the additional indicators against which NERL's safety performance will be monitored in RP3.

## UK approach to safety

2.4 The UK's State Safety Programme (SSP)[21] is developed by the CAA, in conjunction with the DfT, the Air Accidents Investigation Branch, the Ministry of Defence (MoD) and Air Safety Support International. This is in accordance with the International Civil Aviation Organisation (ICAO) requirement for the UK to put in place an SSP to regulate and oversee the UK's aviation system. The SSP sets out the UK's approach to aviation safety, with the following objectives:

*No accidents involving commercial air transport that result in serious injuries or fatalities. No serious injuries or fatalities to third parties as a result of aviation activities.*

2.5 The UK aims to achieve this through State safety objectives that:

- protect people from aviation safety risks;
- reinforce the UK position as a global leader in aviation safety; and
- positively influence aviation safety through collaborative working with the UK's international partners.

2.6 The DfT is in the process of developing a new Aviation Strategy. The SSP is a key component of this, and it will be updated to reflect this evolving strategy. The DfT has agreed that the coordination of the UK SSP should be undertaken by the CAA.

2.7 Post Brexit, the stated preference of the UK Government and the CAA is that the UK remains part of the European Aviation Safety Agency (EASA) aviation safety system. While this remains our position, we are preparing for the possibility of a no-deal Brexit, under which we would recognise EASA certificates, approvals and licences for use in the UK aviation system and on UK-registered aircraft at least for a period of up to two years following Brexit.

## SES requirements

2.8 The performance regulation requires targets to be set for ANSPs at national level against one KPI, Effectiveness of Safety Management (EoSM).[22] The EoSM KPI is measured by the level of implementation of the following management objectives by the ANSP:

a. safety policy and objectives;

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21 https://www.caa.co.uk/Safety-initiatives-and-resources/How-we-regulate/State-safety-programme/Introduction/About-the-programme/

22 Annex 1, section 2, 1.1 of the performance regulation

b. safety risk management;

c. safety assurance;

d. safety promotion; and

e. safety culture.

2.9 Achievement of the safety management objectives is measured by verified responses to questionnaires. For each question, the response should indicate the level of implementation of each objective, characterising the level of performance of the respective organisation.

2.10 The approach to EoSM for RP3 has been modified from RP2, in effect amending the notional target levels and effectiveness scores. The Commission has noted that the framework in RP3 is more stringent than in RP2 which is reflected in the approach taken to setting the RP3 EU-wide targets.[23]

2.11 The Commission has also noted that it has entrusted EASA to update compliance and guidance material to monitor and ensure the correct implementation of the safety indicators.

## CAA draft proposals and stakeholder feedback

2.12 Our draft proposals set out our intention to set a UK EoSM target that was consistent with the EU-wide targets, which had not been adopted at the time of publishing our draft proposals. This was also the approach set out in NERL's RP3 business plan.

2.13 The adopted EU-wide targets for the RP3 safety KPI, to be achieved by the end of 2024, are:[24]

- At least Level C in the safety management objectives 'safety culture', 'safety policy and objectives', 'safety assurance' and 'safety promotion'; and
- At least Level D in the safety management objective 'safety risk management'.

2.14 NERL agreed with the proposal to adopt EU-wide targets at national level.

2.15 IAG noted that it was appropriate for NERL to develop and implement internal aspirational safety targets that exceed those set by the EU.

[23] Commission Implementing Decision (EU) 2019/903 of 29 May 2019, para (10)

[24] Commission Implementing Decision (EU) 2019/903 of 29 May 2019, Article 2

## CAA final conclusions

2.16 Our final decision is to adopt RP3 EoSM targets consistent with the EU-wide targets - specifically that by 2024, NERL shall achieve at least level C in the safety management objectives 'safety culture', 'safety policy and objectives', 'safety assurance' and 'safety promotion'; and level D for the 'safety risk management' objective. This is also the approach proposed in NERL's RP3 business plan. Given NERL's strong historical performance, we expect them to achieve the EU-wide target.

2.17 NERL's RP3 business plan notes it will also set internal safety targets at a more detailed level. We support the inclusion of this initiative as part of NERL's business plan and will continue to monitor progress through oversight by our Safety and Airspace Regulation Group (SARG). We also expect that NERL will report on its safety performance through the Service and Investment Plan (SIP) process and the Condition 11 service standards reporting requirements under its licence.

## Indicators for monitoring

2.18 In addition to the KPI, there are five safety indicators for monitoring under the performance scheme during RP3:

- The rate of runway incursions at airports located in a Member State.
- The rate of separation minima infringements within the airspace of all controlling air traffic services unit in a Member State.
- The rate of runway incursions at an airport calculated as the total number of runway incursions with any contribution from air traffic services (ATS) or Communication, Navigation and Surveillance (CNS) services with a safety impact that occurred at that airport.
- The rate of separation minima infringements within the airspace where the ANSP provides ATS, calculated as the total number of separation minima infringements with any contribution from ATS or CNS services with a safety impact.
- Where applicable, the use of automated safety data recording systems by ANSPs as a component of their safety risk management framework.

2.19 We will continue to monitor and report annually to the Commission on these indicators.

Chapter 3

# Environment

Our final decisions reflect the importance of environmental performance to users:

- For RP3, we have set a KEA flight efficiency target on the basis of continuing improvements in NERL's performance.
- We have set the 3Di efficiency target on a similar basis but moderated the financial incentives associated with this metric to address concerns about the proper functioning of this incentive.
- We support the proposals in NERL's business plan for it to better deal with the noise experienced by overflown communities.

## Introduction

3.1 The performance scheme assesses environmental performance in terms of flight efficiency, as a proxy for carbon emissions. Flight efficiency can be improved in the short-term through the decisions that air traffic controllers make, such as tactically providing direct routeings. In the long-term, more sustained improvements can be achieved through changes in airspace design and airspace modernisation that provide more efficient flight trajectories.

3.2 Although air transport has a significant impact on the environment in terms of carbon emissions and noise, the difference that NERL can make to these externalities by changing the way it provides its services is more limited. However, we expect NERL to take accountability for mitigating the environmental impacts of the services it provides, to the extent it is reasonable and practicable. Improved environmental performance and flight efficiency were recognised as a priority for airspace users in NERL's customer consultation process – along with the benefits of reduced emissions. More efficient flights also reduce fuel burn for airlines and costs for consumers.

3.3 This chapter:

- sets out the requirements under the performance regulation regarding environmental performance;
- sets out our draft proposals for the environmental KPI and additional 3Di metric, including the financial incentive that will be applied to NERL's 3Di performance;
- summarises stakeholder feedback and updates on developments subsequent to publication of our draft proposals;

- sets out our conclusions and final decision on environmental metrics that will be targeted and monitored in RP3; and
- discusses noise in the context of NERL's performance in RP3.

## SES requirements and the KEA indicator

3.4 The performance regulation environment KPI is the horizontal en route flight efficiency of the actual trajectory (KEA). The target is applied at the local (national) level. KEA is defined as:

- a comparison between the length of the en route part of the actual trajectory derived from surveillance data and the achieved distance in local airspace, summed over Instrument Flight Rules (IFR) flights within or traversing the local airspace;
- the 'en route part' refers to the distance flown outside a circle of 40 nautical miles diameter around the origin and destination airports; and
- where a flight departs from or arrives at an airport outside the local airspace, the entry or exit points of the local airspace are used for the calculation of this indicator;
- the indicator is calculated for the whole calendar year and for each year of the reference period, excluding the ten highest and ten lowest daily values.

3.5 Performance plans may contain financial incentives, with a view to encouraging better performance. In respect of the environment, the performance regulation allows flexibility in the design and application of incentives.

### CAA draft proposals and subsequent developments

3.6 Consistent with our approach to RP2 we proposed to not apply a financial incentive on KEA, but instead to apply one to the 3Di metric (discussed below).

3.7 The EU-wide target for KEA and the associated (national) reference values were not available when we published our draft proposals. These are now available[25] and are the average horizontal en route flight efficiency of the actual trajectory (measured as average additional distance flown compared to the great circle distance) and shall not exceed the following percentages: 2.53 % in 2020, 2.47 % in 2021, 2.40 % in 2022, 2.40 % in 2023 and 2.40 % in 2024.

3.8 In March 2019 we asked NERL to develop a proposal for KEA, mindful of the expected EU target.

3.9 NERL's proposals considered the relationship between traffic level and KEA to estimate future performance. Their analysis concluded that traffic growth would

[25] Commission Implementing Decision (EU) 2019/903 of 29 May 2019, Article 3

generate a continuous increase in inefficiency throughout RP3. The proposed targets appeared to be solely based on the increasing traffic forecast and the proposal did not refer to the implementation of Free Route Airspace (FRA) or other investments or interdependencies that may affect KEA.

3.10 Taking account of the limited time between the availability of the Member State reference values and the need to make our final decision, we sent a working note to stakeholders seeking feedback on proposed UK KEA targets.[26]

## Stakeholder feedback

3.11 We received two responses to the working note on KEA, from NERL and Virgin Atlantic.

3.12 NERL welcomed our proposal to base the proposed target on domestic KEA scores but still considered them challenging, in particular the Network Manager (NM)-estimated improvement rate following FRA implementation. NERL also set out its concerns with the EU-wide target, including:

- the RP3 starting point, which assumed that the EU will reach its RP2 targets (which it has not);
- the NM's structural assessment of how airspace changes will affect KEA;
- the possible overlap in NM's assumptions of airspace changes. NERL considers the majority of these will be delivered by end of RP2 and questions the steep improvement rate in RP3; and
- that the NM's proposal assumes no constraints due to military activity.

3.13 Virgin Atlantic made no specific comments on our KEA proposal but asked us to consider whether a read-across between the 3Di metric and KEA could be established to enable all stakeholders to make a link between the UK and European efficiency measures.

3.14 Although no specific proposals were made on KEA in our draft proposal, Ryanair did make a general remark in its consultation response that it considered the adopted EU targets unambitious and considered that FRA and other SESAR funded projects mean NERL should achieve improved efficiency levels in RP3.

## CAA final conclusions

3.15 The NM estimated the FRA roll-out to generate a 4% year on year improvement at the start of RP3 until 2022. However, as set out in NERL's business plan and consistent with legally binding deadlines, full FRA will only be operational in the

[26] This is published on our website.

UK from winter 2021/22. We therefore propose to apply this expected improvement to 2023 and 2024.

3.16 We consider that NERL's proposed KEA target does not represent a sufficiently challenging target as it appears to focus on traffic growth and does not take account of the implementation of FRA. Our final decision is to set the target based on historical national trends (of around 0.2% improvement year on year) for the first three years of RP3 after which a step-change is expected (of around 4% improvement year on year) to account for the full roll out of FRA (as discussed above).

3.17 Our final decision on the RP3 KEA targets are set out in the table 3.1 below:

**Table 3.1: CAA final decision on target KEA performance in RP3**

| | RP2 | | | | | RP3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** |
| UK actual | 3.93% | 4.38% | 4.15% | 4.08% | N/A | N/A | N/A | N/A | N/A | N/A |
| NERL proposal | | | | | 4.18% | 4.23% | 4.25% | 4.27% | 4.29% | 4.30% |
| EC reference value | | | | 4.08% | N/A | 3.53% | 3.39% | 3.25% | 3.25% | 3.25% |
| CAA final decision | | | | 4.08% | 4.05% | 4.06% | 4.05% | 4.04% | 3.88% | 3.72% |

Source: CAA

3.18 We do not intend to apply a financial incentive on KEA but will do so on the 3Di metric (discussed below). We will continue to report annually to the Commission on KEA performance.

3.19 We also acknowledge the request from Virgin Atlantic to establish a link between KEA and 3Di. It is not clear that this is practicable given the differences in these metrics, but we will continue to engage with the EU and encourage further improvements in the KEA metric.

## Additional UK indicator – 3Di

3.20 The performance regulation allows NSAs to implement additional environmental KPIs. Consistent with our approach to RP1 and RP2, we have set a target for an additional domestic environmental KPI that encompasses both vertical and horizontal flight (in)efficiency, referred to as 3Di.

3.21 At an operational level, 3Di encourages NERL to provide efficient routeing both horizontally and vertically, in the climb, cruise and descent phases of flight. It also incentivises NERL to work with other ANSPs to provide as direct as possible 'point to point' flights from beyond and through UK airspace. At a more strategic level, it encourages NERL to consider airspace redesign to promote fuel efficient

(direct) routes too. The more efficient the routes NERL provides, the lower their three-dimensional inefficiency (3Di) score.

## CAA draft proposals

3.22 In its RP3 business plan NERL proposed to continue to use the 3Di metric as the main measure against which its environmental performance is assessed in RP3, with KEA retained for monitoring purposes only. This approach was supported by airspace users in the CCWG Co-Chairs' Report.

3.23 NERL's RP3 business plan included a 3Di target range for RP3 consistent with the RP2 targets, after making a series of adjustments:

- exclusion of training, positioning, surveillance, calibration flights and other non-revenue flights;
- exclusion of diversions due to runway closure;
- including vertical cut-offs: removing data below 7,000 feet for arrivals and 9,000 feet for departures;
- including exemptions of up to 10 days where 3Di is significantly influenced by factors that NERL considers are outside of its control (such as air traffic control strikes in other countries, activation of abnormally large military exercises, severe thunderstorms);
- adjustments to base data to neutralise the impact of changes to the volume of airspace or accuracy of data used for 3Di; and
- modulated targets if traffic levels markedly diverge from the base traffic forecast.

3.24 Our draft proposals allowed only the first of these adjustments on the basis that such flights may have a disproportionately large impact on the 3Di score and do not typically seek to maximise flight efficiency. We considered that the remaining adjustments may sanitise the 3Di metric of any real insights into how NERL performs on flight efficiency given real operational and business constraints. The adjustments could also result in a disconnect between NERL's score in a year and users' experience in that year.

3.25 We proposed the following targets and incentive deadbands for the 3Di metric in RP3:

**Table 3.2: CAA's draft proposal for 3Di targets and deadbands**

| | RP2 (recalculated for model changes) | | | | | RP3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| NERL performance | 29.5 | 29.7 | 29.0 | 28.6[27] | N/A | N/A | N/A | N/A | N/A | N/A |
| Par value[28] | 29.1 | 28.6 | 28.3 | 27.5 | 27.1 | 26.8 | 26.5 | 26.2 | 25.9 | 25.6 |
| Lower bound of deadband | N/A | N/A | N/A | N/A | N/A | 25.5 | 25.2 | 24.9 | 24.6 | 24.3 |
| Upper bound of deadband | N/A | N/A | N/A | N/A | N/A | 28.1 | 27.8 | 27.5 | 27.2 | 26.9 |

Source: CAA

3.26 We proposed a 1.0% improvement in 3Di target values relative to the previous year based on:

- a review of NERL's 3Di performance in RP2 (with the 3Di metric recalculated to exclude non-revenue flights);[29] and
- the latest traffic forecast available at the time and the operational improvements set out in NERL's RP3 business plan that are expected to improve flight efficiency, including airspace modernisation and the deployment of SES ATM Research (SESAR) technologies.

3.27 This translated to approximately a 0.3 reduction in the par value annually. We also proposed a deadband of +/-5% for RP3, as in RP2. Beyond the deadband, the incentive will follow a smooth sliding scale until +/-25% of the target (narrowed down from 28% in RP2) at which point maximum financial bonus or penalty (0.5% of Determined Costs) will apply.

## Stakeholder feedback

3.28 NERL considered our proposed 3Di targets were unachievable and identified a number of concerns, including that we had not allowed the adjustments they have proposed, difficulties of maintenance of RP2 level targets (in light of increasing traffic) and that airspace design change programmes would not deliver improvements until late in RP3. It stated that the RP3 start point for the

27 The 2018 figure in the draft proposals of 28.7 was based on data to the end of October 2018. The actual 2018 performance was 28.6, once adjusted downwards by 0.6 (see footnote below).

28 The par value for RP2 as well as NERL's actual performance have been adjusted downwards by 0.6 to reflect the exclusion of various types of non-revenue flights.

29 Note that since the proposed change to the calculation of 3Di would only apply from the start of RP3, it has no impact on how NERL's performance in RP2 is assessed.

1% improvement should be based on actual performance at the end of RP2, i.e. the latest 2019 estimate, rather than RP2 targets.

3.29 In respect of the proposed adjustments we had not accepted, NERL stressed the importance of the vertical cut-off and considered that to not allow this contradicted UK Government policy which prioritises noise impact over fuel efficiency below 7,000 ft. They also pointed to airspace user support to exclude from the 3Di metric factors NERL identified as being outside of its control.

3.30 NERL also said that we had not justified the narrowing of the sliding scale from 28% to 25%.

3.31 The airline community generally supported our draft proposals and expressed disagreement with NERL's proposed adjustments.

3.32 IAG supported the continuation of the 3Di metric and noted it preferable to the KEA measure. However, it raised concerns with NERL's business plan proposal to maintain the target at RP2 levels given that NERL underperformed but kept within the bounds of the incentive scheme. IAG welcomed our proposals to disallow NERL's proposed adjustments to the metric. IAG also opposed bonuses in principle and considered that a fair return is sufficient for meeting targets.

3.33 Ryanair agreed that the 3Di metric is suitable for measuring environmental efficiency in UK airspace but considered the targets could be more ambitious given maturity of the metric and FRA provisions. It proposed a target for RP3 that followed an improvement rate calculated from 2015 actuals to the 2019 target, resulting in a 2024 target of 25.3 vs. our proposal of 25.6. Ryanair also suggested the bonus pot should be reduced to 0.5% of Determined Costs and the penalty maintained at 1%.

3.34 Prospect urged us to review the adjustments to the metric proposed by NERL to ensure the metric did not become irrelevant and demotivating to operational staff. It gave a number of examples to illustrate its concerns, including the high workload situations that are experienced by staff during severe weather events when flights diverted for safety reasons should not count against the 3Di metric.

3.35 PCS broadly agreed with our approach to the 3Di metric and welcomed the exclusion of certain types of flight. However, it considered the remaining adjustments should also be adopted, especially with regards to diversions and exceptional events where staff should prioritise safety over flight efficiency.

## CAA final conclusions

3.36 We welcome the continued support from stakeholders to focus incentivising environmental performance on the UK-specific 3Di metric, as a measure of assessing flight efficiency in UK airspace.

### Adjustments

3.37 Although airspace users voiced tentative support for refinements at the time of NERL's customer consultation, these were conditional on their involvement in the process of defining such refinements, which we understand did not take place based on user responses to our consultation which opposed adjustments.

3.38 We maintain our draft proposals position on the various adjustments to the 3Di metric proposed by NERL. While NERL may not have direct control over certain factors that influence the 3Di score, we consider it is important that NERL continues to consider flight efficiency in responding to these factors.

3.39 We consider that the value to airspace users of the 3Di metric above the KEA is its vertical component and the fact that it is a gate-to-gate metric. Excluding the vertical cut off adjustment means the score is more representative of airlines' actual experience. We also have full confidence in NERL staff prioritising safety at all times and especially in unexpected and complex situations (such as runway closures or extreme weather events).

### Incentives

3.40 Given stakeholders concerns about our approach to calculating the metric, we propose to reduce the strength of the incentive scheme. The potential for bonus and penalty will be capped at +/-0.5% of Determined Costs, reduced from +/-1% in our draft proposals.

3.41 We propose to maintain the draft proposal of narrowing the sliding scale for the incentive from 28% to 25%, at which point maximum bonus or penalty will be reached. This was proposed given the changing basis of calculation of the 'pot' of the incentive from a percentage of revenues in RP2 to a percentage of Determined Costs in RP3. With the latter being historically lower than the former, we consider maintaining 1% efficiency improvement along with tightening of the incentive sliding scale would make the strength of the incentive more consistent between the periods. Further information on the calculation of the 3Di incentive rate is set out in Appendix D.

### Improvement rate

3.42 We maintain that the 1% improvement rate on the previous year's performance set out in our draft proposals is an appropriate rate for NERL to aim for. NERL succeeded in maintaining this improvement throughout RP2, despite considerably higher outturn traffic.

3.43 To establish the starting point for the RP3 target, and as suggested by NERL, we have taken into account Q1 and Q2 2019 data made available in NERL's quarterly reports. This indicated that NERL's year-to-date 2019 performance was 28.1 (once adjusted for the exclusion of non-revenue flights). We consider it

appropriate to review the starting point used in our draft proposal and apply the 1% improvement rate to the latest available 2019 data.

3.44 The final RP3 targets and incentive deadband values for 3Di are illustrated in the table below.

**Table 3.3: CAA's final decision for 3Di targets and deadbands**

| | RP2 (recalculated for model changes) | | | | | RP3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| NERL performance[30] | 29.5 | 29.7 | 29.0 | 28.6 | 28.1[30] | N/A | N/A | N/A | N/A | N/A |
| Par value[31] | 29.1 | 28.6 | 28.3 | 27.5 | 27.1 | 27.8 | 27.5 | 27.3 | 27.0 | 26.7 |
| Lower bound of deadband | N/A | N/A | N/A | N/A | N/A | 26.4 | 26.2 | 25.9 | 25.6 | 25.4 |
| Upper bound of deadband | N/A | N/A | N/A | N/A | N/A | 29.2 | 28.9 | 28.6 | 28.3 | 28.1 |

Source: CAA

## Management of changes and the annual review of the 3Di model

3.45 NERL will be required to maintain a consistent method for calculation and the input measurements that affect the value of the 3Di value throughout RP3 and any further measurement or method changes NERL wishes to make to the model in RP3 should not be incorporated into the regulatory reporting.

3.46 Where unavoidable changes to the input measurements occur as a by-product of operational developments (for example, changes to the radar processing data) and these cannot be implemented in a manner that allows for parallel reporting, we expect to be fully informed of such changes prior to implementation.

3.47 The annual review process tests whether the model that was used to set the RP3 targets remains sufficiently representative of NERL's operating environment and is a suitable basis for the incentive.

3.48 The financial incentive on 3Di does not apply in a year in which the test 3Di model has failed. If the test 3Di model fails in two consecutive years, the 3Di incentive will automatically be withdrawn for the remainder of RP3.

30 Based on Q1-Q2 data

31 NERL's actual performance as well as the par value for RP2 have been adjusted downwards by 0.6 to reflect the exclusion of various types of non-revenue flights and allow comparability with RP3 targets

3.49 Details of the annual review are contained in the 3Di Annual Review Protocol.[32] These will be revised ahead of RP3 to reflect the adjustment to the metric for non-revenue flights and will set out the process for unavoidable changes to the input measurements which occur as a by-product of operational developments (discussed above). The Protocol will form part of our statutory consultation on NERL licence modifications.

## Indicators for monitoring

3.50 The performance regulation requires the monitoring of a number of environmental indicators:[33]

- horizontal en route flight efficiency of the last filed flight plan (KEP) – applicable at the European Network Management level and not considered further in this document;
- horizontal en route flight efficiency of the shortest constrained trajectory;
- additional time in the taxi-out phase;
- additional time in terminal airspace; and
- share of arrivals applying Continuous Descent Operations (CDO).

3.51 We will continue to monitor and report annually to the Commission on these indicators.

3.52 The performance regulation also requires the monitoring of the ratio of the number of arrivals performing a CDO from a reference point at a height above ground defined by the NSA, and the total number of arrivals. The Eurocontrol Performance Review Commission has proposed harmonised monitoring of CDO from 7,000 feet. The UK Arrivals Code of Practice[34] establishes 5,500 feet above aerodrome level for monitoring of CDOs.

3.53 In our draft proposals we set out our intention to define the CDO monitoring threshold as 5,500 feet above aerodrome level, consistent with the definition from the Arrivals Code of Practice, as this will avoid flights being recorded as non-CDO due to any level segments that might occur as a result of the 6,000 feet transition altitude (TA) or routine holding at flight level 70 (FL70) in the London airport holding stacks.

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32 RP2 3Di Protocol is available on the CAA website under NERL's Licence and can be accessed here: http://www.caa.co.uk/WorkArea/DownloadAsset.aspx?id=4294974171

33 Annex I, section 2, 2.2 of the performance regulation

34 Noise from Arriving Aircraft: An Industry Code of Practice. The Arrivals Code of Practice is a voluntary Code of Practice that has been compiled by a group representing airlines, air traffic control, airports, the CAA and DfT (November 2006)

3.54 Following feedback from IATA that we should consider adopting the harmonised threshold applied by Eurocontrol, and mindful of the benefits of benchmarking, we consider it appropriate to measure the rate of CDOs from the pan-European threshold of 7,000 feet, in addition to the UK-specific threshold of 5,500 feet. The comparison of the two metrics over time will also allow monitoring of the impact of TA or routine holding.

## Noise

3.55 There are important interactions between flight efficiency and the noise impacts on overflown communities. For example, departure routes from several UK airports are fixed up to 4,000 feet in order to minimise the noise impact and this may constrain the extent to which flight efficiency could be maximised at lower heights.

3.56 We set out our expectations for NERL's RP3 business plan with regard to noise and the trade-off between flight efficiency and minimising noise impact, stating that NERL should expect to abide by existing and emerging DfT policy and CAA requirements on noise, including in relation to airspace design, the redistribution of air traffic and any new requirements from the DfT's Aviation Strategy.[35] We also indicated that NERL should expect to take account of noise in designing their operational activities (within the framework of safety, policy and process requirements) and to work with wider stakeholders as part of the UK airspace design and implementation masterplan, in support of our AMS, to identify opportunities to mitigate noise impacts.

3.57 In its RP3 business plan NERL said it would:

- work collaboratively with local airports and airlines to mitigate the impacts of noise on communities, recognising difficult trade-offs between reducing noise and operational efficiency and the commercial interests of airlines;
- develop new data and processes to analyse noise mitigation options when making changes to procedures or airspace; and
- expand its community engagement strategy.

3.58 We support NERL's proposals in relation to these matters and, in the context of the AMS, will monitor their progress. While we do not make any specific proposals in respect of noise as part of the performance plan, we note that NERL has been asked to reflect noise reduction in our joint (with DfT) commission for an airspace change masterplan.

[35] Letter from Paul Smith, CAA to Martin Rolfe, NATS (25 September 2018)

Chapter 4

# Capacity

The availability of sufficient airspace capacity is very important to users as shortages of capacity can cause delays. Airspace capacity is measured and NERL is incentivised in terms of delays. The final decisions which follow:

- adopt average targets for the C1 to C3 capacity metrics consistent with targets published by the EU in May 2019 but reprofile between years to better support the introduction of systems necessary to allow airspace change;
- have reduced the bonuses available to NERL under the incentive arrangements given the concerns expressed by stakeholders about the operation of these arrangements; and
- increased the number of transition days available to NERL from 75 to 100 to support airspace modernisation.

## Introduction

4.1 The performance scheme measures airspace capacity by the delays incurred by aircraft using en route ANS. While users prefer experiencing fewer and shorter delays, there is a level of "efficient delay" beyond which the cost of reducing delays is likely to exceed the value that users place on avoiding delay.

4.2 It is NERL's responsibility to deliver a quality service in line with airspace users' reasonable expectations. We expect that NERL will continue to perform in RP3 in the context of increased pressure on its performance from rising traffic and planned system and airspace changes. In the medium-term some of the programmes that NERL is expected to deliver in RP3 should result in improved capacity, particularly in Southern England. However, any changes to NERL's operational systems will require very careful planning and mitigations to ensure safety and an appropriate level of service continuity.

4.3 This chapter:

- sets out the requirements under the performance regulation regarding capacity;
- summarises our draft proposals for the RP3 capacity metrics and incentives;
- summarises stakeholder feedback and updates on developments subsequent to the publication of our draft proposals; and

- sets out our final decisions on these matters.

Detailed information on the capacity KPIs and incentives can be found in Appendix D.

4.4 Capacity and resilience with regards to NERL's London Approach service is discussed in chapter 8.

## SES requirements

4.5 The capacity KPI is the average minutes of en route air traffic flow management (ATFM) delay per flight attributable to ANS, calculated as follows:[36]

- the en route ATFM delay is the delay calculated by the Network Manager, expressed as the difference between the estimated take-off time and the calculated take-off time allocated by the NM;
- the indicator covers all IFR flights traversing the local airspace and all ATFM delay causes, excluding exceptional events; and
- the indicator is calculated on the basis of calendar years for each year of the reference period.

We refer to this KPI as C1. The target is set at the national level.[37]

4.6 The performance regulation also requires that Member States establish financial incentives for ANSP capacity performance. In the setting of financial incentives, the performance regulation allows for adjustments to be made to C1 (which is based on all causes of ATFM delay) to account for only ANSP-attributable delay.[38] Consistent with our approach to RP2, we refer to this adjusted metric as C2. The C2 measure is effectively a par value established on the basis of the C1 target that underlines the EU-mandated capacity incentive mechanism.

4.7 Financial incentives for capacity may be asymmetric, with the percentage cap on the value of penalties and bonuses to be determined by NSAs in advance of the reference period. While the performance regulation does not set a cap on the level of penalties on C2, they must be at least equal to the potential for bonuses. The performance regulation also allows the C2 target value to be modulated for variations in traffic.

4.8 The performance regulation also allows Member States to adopt additional indicators where these encourage ANSPs to achieve a high level of

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36 Annex I, section 1, 3.1 of the performance regulation

37 In RP2 C1 is established at the FAB level. This is no longer a requirement under the performance regulation and the UK and Ireland have agreed to prepare national performance plans for RP3.

38 These causes are ATC capacity (C), ATC routeings (R), ATC staffing (S), ATC equipment (T), airspace management (M) and Special Event (P), as set out in the Eurocontrol, ATFCM Users Manual

performance. When aggregated with any financial incentive on the environment KPI, the incentive value of any additional capacity measures may have a maximum bonus value of 2% of Determined Costs and a maximum penalty value of 4% of Determined Costs.

## CAA draft proposals

4.9 The CCWG Co-Chairs' Report noted that airlines generally supported NERL's RP3 business plan proposal to maintain the capacity targets for RP3 at the same levels as for RP2, with NERL providing more transparent and robust information on the impact of service improvements on costs.

### C1 target

4.10 The EU-wide capacity target had not yet been adopted at the time of our draft proposals, but we considered there was value in proposing to maintain the C1 target (on all causes of delay) at the level targeted in RP2 of 0.23 minutes of delay per flight, as agreed between NERL and airlines during customer consultation.

### C2 target and incentive

4.11 In its RP3 business plan NERL proposed that it would continue to target C2 performance at the same level as RP2 (an average level of ANSP-attributable ATFM delay of 0.18 minutes per flight), with the addition of a new special event transition delay mechanism that would exclude specified delays associated with technical transitions. This was also discussed and agreed in the CCWG Co-Chair's Report.

4.12 Our analysis of NERL's historical delay performance suggested NERL could achieve more ambitious C2 performance. However, taking into account airspace user agreement to NERL's proposal, the need to implement a significant airspace modernisation programme through RP3 and forecast traffic growth, our draft proposals maintained the target levels proposed by NERL of 0.18 minutes per flight.

4.13 Our draft proposals also introduced a modulation mechanism for C2 to account for significant changes in traffic as well as revisions to the reference value contained in the Network Operations Plan (NOP). Given new requirements under the RP3 performance regulation for symmetric deadbands around targets, our draft proposals included a +/-15% deadband and consequential changes to the sliding scale for the incentive.

4.14 We also proposed a moderate increase to the strength of the incentive and noted that:

- the performance regulation required the calculation of the incentive 'pot' in RP3 be based on a percentage of Determined Costs, rather than revenue as in RP2, providing greater certainty over the value at stake;
- the deadbands around the target value would be symmetric unlike the approach in RP2. The proposed RP3 deadband of ±15% meant that bonuses would be triggered sooner than in RP2 (and the maximum bonus will also be reached sooner), it also meant penalties would be triggered later than in RP2 where they were set at -10%; and
- the introduction of modulation of the target for the purposes of the financial incentive to protect NERL (and airspace users) from the impact of large and unexpected changes in traffic volumes.

## Additional capacity measures – C3 and C4

4.15 Our draft proposals included two additional capacity measures, as in RP2, designed to focus on elements of delay performance that users regard as particularly important:

- Impact Score, referred to as C3, which places greater weight on long delays and delays in the morning and the evening peaks; and
- Daily Excess Delay Score, referred to as C4, which is based on weighted delays exceeding pre-determined thresholds on a daily basis.

4.16 For C4, the incentive is a penalty only since users reasonably expect not to suffer from the kind of severe disruptions that are captured by this metric (such severe disruptions are generally due to some form of exceptional system failure).

4.17 We proposed a moderate increase to the strength of C3 and C4 incentives for RP3, which we understand to carry most value to users based on feedback in previous price controls and the CCWG Co-Chairs' Report. We also proposed that in RP3 these additional metrics should continue to be subject to the provisos that:

- on days when C4 applies, the implied penalty applied for that day for C3 and C4 in aggregate should be the higher of either individual penalties for the day; and
- NERL will be allowed to exclude up to 75 days from counting against the C3 and C4 incentives when major new systems or airspace changes are being implemented. NERL is required to consult with users on the exemption days in advance.

4.18 The thresholds for C3 beyond which NERL can earn a bonus or penalty are determined with reference to C2. Our draft proposals updated the conversion factor to reflect the historical relation between the two measures (see Appendix

D for details). This resulted in an upper score of 22 and lower score of 14, compared to NERL's proposal to maintain RP2 levels of 24 and 16 respectively.

4.19 As per RP2, we proposed that the C3 targets be modulated to account for any material variations between actual and forecast traffic volumes. This is explained in detail in Appendix D.

4.20 In our draft proposals we lowered the C4 target (and therefore the penalty threshold) from 2000 in RP2 to 1800 in RP3.[39] Following the Independent Enquiry into NERL's resilience and the introduction of a resilience condition in the NERL licence, we considered that users can reasonably expect that such exceptional events would become even less frequent and less disruptive.

## Exemption days for C3 and C4

4.21 Exemption days were applied to C3 and C4 in RP2 and allowed NERL to exclude up to 75 days in which system changes or airspace changes resulted in delay.

4.22 NERL proposed to replace the exemption days in RP3 with a transition allowance for three major transitions expected to occur during RP3: Deployment Point (DP) En Route, DP Lower and London Airspace Management Programme (LAMP). Users expressed provisional agreement at the time of customer consultation but wanted to be involved in developing the governance process for this ahead of NERL's RP3 business plan being finalised. It is not clear whether further engagement took place.

4.23 NERL suggested that the new transition mechanism should apply to all capacity metrics (i.e. it would apply to C1/C2 as well as to C3 and C4). Actual delays above the agreed allowance would be included in the metric, whereas actual delay below the allowance would be considered used up and not carried over for later transitions.

4.24 Our draft proposals did not support NERL's proposed changes to account for transition delay:

- NERL's proposal is not consistent with the capacity KPIs (C1 and C2) under the performance regulation. The regulation only allows the exclusion of 'exceptional events', which are defined as both one of the causes listed in the regulation and which give rise to the activation European Aviation Crisis Coordination Cell; and

[39] An explanation of how the C4 target values are derived is set out in Appendix D

- it is unclear how we, or users, would be able to monitor or confirm that the delay allowance is only used when NERL actually incurred a transition-attributed delay.

4.25 We proposed:

- to retain the exemption days approach for RP3, with a cap of 75 days;
- that NERL consults with users on a period of transition of up to three weeks (unless agreed with users), with proposals for the number of exempt days that NERL expects it will require during that period. The period of transition and the number of days will then be fixed (unless subsequently revised with the agreement of users) but the particular exempt days would not need to be specified as part of the consultation. This would leave NERL to implement the change by means of the detailed steps and timing according to its operational requirements; and
- NERL would then nominate the actual exempt days at the end of the relevant transitional period. These would then count against the overall 75-day exemption.

## Stakeholder feedback

4.26 NERL's response to our draft proposals noted that the proposed capacity targets for C1 and C2 went beyond what was required to meet the EU-wide target and beyond the delay that airlines said they would accept in RP3. Although our draft proposals were based on the numbers proposed by NERL, they considered that not allowing their new transition allowance as proposed for C1 and C2 meant the targets were no longer achievable and would force NERL to focus on stricter performance levels to the detriment of development of the network for the future.

4.27 NERL considered that the higher and asymmetric C2 incentive strength was unjustified and would adversely impact investment. NERL provided a counter-proposal for C1 and C2 metrics, with options ranging from removing C2 metric altogether, removing the incentive scheme, to increasing the targets to the maximum allowed by the EU-wide targets.

4.28 NERL did not provide supporting data for this. However, they did support the proposed mechanism for modulating the C2 target.

4.29 NERL considered we did not justify the tightening of the C3 or C4 targets and the associated incentive schemes and pointed out that airlines previously agreed to maintaining the targets and incentives at RP2 levels. With regard to exemption days for C3 and C4, NERL considered that we did not take into account seven major transitions in RP3 compared to two in RP2 and, in order to reflect this, proposed an increase of the allowance from 75 to 150 days throughout RP3.

4.30 The airline community supported our proposed ambition for C1-C4 and also supported the approach to exemption days for C3 and C4, but asked for further elaboration on the cap and consultation requirements. The airline community did not support the proposed bonuses for C2 and sought a simplified incentive scheme that introduces penalties where the agreed service levels are not delivered. It also did not support modulation of the C2 metric.

4.31 IAG disagreed in principle with bonuses being applied to C2, especially given historically proven potential for NERL to significantly outperform the target levels. IAG broadly supported the increase in the strength of the capacity incentives but considered the moderate improvements to C3 and C4 unambitious given past performance and severity of disruption to airlines and passengers if these are triggered.

4.32 IAG were broadly supportive of NERL's proposal to replace exemption days with transition allowance targeted at three specific transitions, but stated that the application of transition allowance to C1 and C2 was unacceptable. It also sought clarity on our proposed 75-day cap.

4.33 Ryanair also noted the lack of ambition in the adopted EU-wide target and considered our proposed targets could be reduced further given some of NERL's historical (out)performance. It did not accept NERL's claim that technology and airspace change warrant weakening of targets, but instead considered that the changes should deliver additional capacity. It welcomed the increase in penalties, but still considered it insufficient and considered the bonuses too easy to achieve. It considered asymmetry (in favour of penalties) should be applied to all service quality metrics.

4.34 Prospect considered the capacity targets unrealistic when compared to the opex interventions and emphasised the importance of a mechanism to divorce delay due to introduction of complex deployments from the targets. It raised concern over safety risks should NERL unconsciously seek to reduce transition delay to the bare minimum to reduce the potential penalty. It disagreed with the proposed increase in incentive strength and thought they would put further pressure on NERL and its staff.

4.35 PCS welcomed our acceptance of the C1 and C2 targets agreed through customer consultation and the introduction of modulation for C2. However, it raised concerns that these targets would become unachievable in the context of growing traffic and planned capacity enhancements.

## Developments since draft proposals

4.36 The EU-wide target for capacity (C1), adopted in May 2019, and the associated (national) reference values have been made available since the publication of our draft proposals.

4.37 The RP3 EU-wide C1 targets are:

- 0.9 min/flight in 2020 and 2021;
- 0.7 min/flight in 2022; and
- 0.5 min/flight in 2023 and 2024.[40]

4.38 The (national) reference values, updated in the June 2019 NOP. The published UK reference values, designed to be consistent with the EU-wide target, are:

- 0.34 min/flight in 2020 and 2021;
- 0.30 min/flight in 2022;
- 0.26 min/flight in 2023; and
- 0.27 min/flight in 2024.

## CAA final conclusions

### C1

4.39 NERL's proposed new transition delay approach appears to be inconsistent with the performance regulation. Nonetheless, it is important to take account of stakeholder feedback on the potential difficulties our draft proposals for C1 (and consequently C2 and C3) might create in discouraging NERL from implementing significant transitions during RP3.

4.40 With a view to providing additional flexibility to support technology and airspace delivery in RP3, while maintaining day to day performance and the primary focus on safety in light of transitions, our final decision is to increase the C1 target in line with the UK reference value in the NOP.

4.41 We note that the NOP allowance is more generous at the start of the reference period and then tightens towards the end of the period. Based on NERL's plans for the major transitions, we consider that the delay targets for C1 (and subsequently C2 and C3) should be re-profiled, so that:

- annual targets are more aligned with forecast performance in the short term and better account for transitions later in RP3;
- the associated incentive schemes (C2 and C3) are therefore more meaningful; and
- the overall impact on users is neutral in terms of total delay incurred throughout RP3 (calculated using STATFOR's February 2019 forecast).

[40] Commission Implementing Decision 2019/209 of 29 May 2019

**Table 4.1: CAA final decision on C1 target for RP3**

| C1 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| Initial proposals (NERL RP3 business plan proposal) | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| June 2019 NOP | 0.34 | 0.34 | 0.30 | 0.26 | 0.27 |
| CAA final decision (NOP values re-profiled) | 0.26 | 0.32 | 0.32 | 0.30 | 0.32 |

Source: CAA

## C2

4.42 Following the upward adjustment and re-profiling of the C1 target, we have assumed a proportionate revision of the C2 measure, maintaining the RP2 relationship between C1 and C2. Our final decision is set out below in table 4.2.

4.43 In addition to re-profiling the C2 target, to better align with NERL's planned programme of transitions and take account of stakeholder feedback, we have also amended our approach to incentives. To avoid the possibility of creating windfall gains or losses for NERL through more flexible targets, we have reduced the strength of a possible C2 bonus to near zero, as well reducing the strength of penalties so as not to discourage NERL from delivering its programme, even where it might incur delay.

4.44 Details of the application of the capacity incentive scheme can be found in Appendix D with the changes to the strength of service quality incentives summarised in the section below.

4.45 Following our decision to re-profile the C2 target to account for the timing of transitions, we consider it no longer appropriate to modulate the target, given break in the direct link to the NOP.

4.46 Table 4.2 summarises the C2 target for RP2 alongside NERL's actual performance so far in RP2 and sets out our final C2 target for RP3.

**Table 4.2: CAA final decision on C2 target for RP3**

| ATFM delay minutes/flight[41] | RP2 | | | | | RP3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| C2 target | 0.17 | 0.18 | 0.18 | 0.18 | 0.18 | 0.20 | 0.25 | 0.25 | 0.23 | 0.25 |

[41] Figures presented are for average minutes of en route ATFM delay per flight attributable to ANS, with the codes C, R, S, T, M and P

| ATFM delay minutes/flight[41] | RP2 | | | | | RP3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| NERL performance | 0.04 | 0.21 | 0.10 | 0.21 | N/A | N/A | N/A | N/A | N/A | N/A |

Source: CAA

## C3

4.47 The C3 target is derived by multiplying C2 by a factor (after adjusting it from minutes/flight to seconds/flight). Our final decision is to maintain the updated factor in our draft proposals, which more closely reflects historical performance. Details of how the metric is calculated can be found in Appendix D.

4.48 Consistent with our approach to other incentives, we will make the C3 incentive asymmetric with the level of potential bonuses decreased from 1% to 0.25% of Determined Costs and penalties decreased from 1% to 0.75% of Determined Costs.

**Table 4.3: CAA final decision on C3 target for RP3**

| ATFM delay minutes/flight[42] | RP2 | | | | | RP3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Lower threshold (modulated) | 16 | 16 (16.5) | 16 (18) | 16 (17) | 16 | 16 | 20 | 20 | 19 | 20 |
| Upper threshold (modulated) | 24 | 24 (24.8) | 24 (27) | 24 (26) | 24 | 24 | 30 | 30 | 28 | 30 |
| NERL performance | 5.2 | 25.0 | 12.6 | 17.05 | N/A | N/A | N/A | N/A | N/A | N/A |

Source: CAA

## C4

4.49 We received no new evidence suggesting we should change our approach from our draft proposals for the C4 target. We acknowledge that NERL has significantly outperformed this metric in the past but considers this level appropriate given that is it is geared towards NERL's performance during exceptional events which disturb capacity availability.

4.50 We propose to moderate our draft proposals on incentives consistent with the broad approach described above, such that is it consistent with the incentive

[42] Figures presented are for average minutes of en route ATFM delay per flight attributable to ANS, with the codes C, R, S, T, M and P

applying in RP2. An explanation of the rate at which a score above the threshold would result in financial penalty to NERL is set out in Appendix D.

**Table 4.4: CAA final decision on C4 target (penalty threshold) for RP3**

| Daily Excess Delay Scores | RP2 | | | | | RP3 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018[43] | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Penalty threshold | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 1,800 | 1,800 | 1,800 | 1,800 | 1,800 |
| NERL performance | 14.2 | 176.7 | 0.6 | 350 | N/A | N/A | N/A | N/A | N/A | N/A |

Source: CAA

## Exemption days

4.51 We acknowledge NERL's and other stakeholder concerns on the number of complex transitions planned for RP3 compared to RP2. We have addressed this in part, through aligning our C1 target (on which C3 is based) with the UK reference values in the NOP and then re-profiling the target level of delay for C3. Subject to the clarifications requested by airspace users and set out in Appendix D, we have decided to also increase the allowance for exemption days due to transitions from 75 days in our draft proposals to 100 days.

# Summary of all service quality incentives

4.52 Our financial incentives for capacity are designed to promote the achievement of high levels of service quality, with the value of the incentives allocated between the three capacity metrics in a way that we understand corresponds to what users value most.

4.53 The table below summarises our final decisions on financial incentives for NERL performance on capacity and environment in RP3, and compares them to the incentives in RP2 and our draft proposals.

**Table 4.5: Summary of RP3 service quality financial incentives**

| Term | RP2 (% of revenue) | | RP3 (% of Determined Costs) CAA draft proposals | | RP3 (% of Determined Costs) CAA final decision | |
|---|---|---|---|---|---|---|
| | Maximum bonus | Maximum penalty | Maximum bonus | Maximum penalty | Maximum bonus | Maximum penalty |
| C2 | 0.25% | 0.25% | 0.5% | 0.75% | 0.05% | 0.25% |
| C3 | 0.75% | 0.5% | 1% | 1% | 0.25% | 0.75% |

[43] NERL is forecast to come in below the threshold in 2018

| Term | RP2 (% of revenue) | | RP3 (% of Determined Costs) CAA draft proposals | | RP3 (% of Determined Costs) CAA final decision | |
|---|---|---|---|---|---|---|
| | Maximum bonus | Maximum penalty | Maximum bonus | Maximum penalty | Maximum bonus | Maximum penalty |
| C4 | N/A | 0.25% | N/A% | 0.50% | N/A | 0.25% |
| 3Di | 1% | 1% | 1% | 1% | 0.5% | 0.5% |
| Total | 2% | 2% | 2.50%[44] | 3.25% | 0.8% | 1.75% |

Source: CAA

[44] 2.5% overall maximum bonus comprising: 0.5% (of a possible 2%) for the mandatory C2 bonus; and 2% (of a possible 2%) for additional aggregate C3, C4 and 3Di bonuses

Chapter 5

# NERL RP3 costs

In order to operate safely, provide the high quality air traffic services that its customers reasonably expect and play its full part in the delivery of airspace modernisation NERL will need to incur significant levels of both operating and capital expenditure. These final decisions:

- allow in full NERL's business plan operating costs for the first three years of RP3 and then assume cost reductions in line with historical efficiency trends;
- make further adjustments to align NERL's cost forecasts with its forecast of non-regulated revenues and the likely level of its pension costs;
- provide for all the capital projects NERL has identified in respect of airspace modernisation and make allowances for contingency funds and arrangements (with appropriate governance arrangements) to provide for additional funds if the need for further efficient spending is properly identified;
- include an additional incentive designed to ensure NERL follows through with its plans for the delivery of airspace modernisation; and
- provide for enhanced governance arrangements for NERL's capital expenditure, with users having access to better and more timely information.

## Introduction

5.1 To set the allowed charges to users, we need to set the overall level of Determined Costs that NERL can recover over RP3. This chapter sets out our final decision on operating costs, which are recovered directly through Determined Costs, and capital expenditure, which is recovered over time through allowances for regulatory depreciation and allowed returns in the Determined Costs.

5.2 More than half of NERL's Determined Costs relate to its operating costs (excluding depreciation). Its operating costs are made up primarily of staff and pension costs, reflecting the costs associated with employing the technical staff necessary to run an air traffic service and its defined benefit pension scheme arrangements. NERL has also put forward a substantial capital programme in its RP3 business plan, reflecting its intention to continue to modernise its systems to support airspace modernisation.

5.3 Our decisions on Determined Costs are not specific recommendations for how NERL should operate or invest in its business. It is NERL's responsibility to

manage its business in a way consistent with the overriding priority of safety, and then to meet its obligations to provide a high quality of service to users, play a leading role in driving forward and delivering the delivery of airspace modernisation, and act consistently with the governance processes that provide a role for its key stakeholders in decisions on its capital programme and other matters.

5.4 This chapter sets out our final decisions and assumptions on NERL's RP3 UK en route Determined Costs, including:

- operating costs (excluding depreciation and pensions);
- the costs and revenues associated with NERL's non-regulated activities;
- pension costs;
- capital expenditure (which is funded by a combination of regulatory depreciation and returns on NERL's regulatory asset base as explained further in Chapter 7); and
- enhanced governance arrangements for NERL's capital expenditure programmes.

## Process and approach

5.5 We have sought to set revenue allowances that are consistent with NERL meeting its statutory obligations, including safety, and should allow NERL to provide the high-quality services required by its users. As well as NERL meeting its obligations and providing services in a resilient manner, it should also operate, plan and invest in its business in a way that is efficient. We have based our assessment of NERL's RP3 en route costs on:

- NERL's RP3 business plan and the supplementary information it has provided;
- the conclusions from NERL's customer consultation process as set out in the CCWG Co-Chairs' Report;
- evidence from the Steer/Helios study on NERL's operating and capital costs;
- CEPA's study of NERL's cost allocation and non-regulatory income forecasts;
- GAD's report on NERL's pension costs;
- historical trends;
- the Commission's cost efficiency targets and guidance on its targets; and
- responses to our draft performance plan proposals.

# Operating costs (excluding depreciation and pensions)

5.6 Operating costs are a significant part of NERL's Determined Costs, about 72% in our draft proposals, and are vital to allow NERL to run its day to day operations. In NERL's RP3 business plan staff costs were about 65% of its operating costs, with non-staff costs about 35%. While we include an overall operating cost allowance for NERL in its Determined Costs, we do not set separate allowances for staff and non-staff costs, nor take a view on how many staff NERL should employ or how its staff should be remunerated.

## CAA draft proposals

5.7 In its RP3 business plan NERL said increases in its costs are driven by growth in traffic and significant changes to the way it expects to run its business in the coming years. It will introduce new technology to replace existing legacy systems, undertake an airspace modernisation programme, improve operational resilience and manage air traffic growth and more complex interactions between air traffic movements in busier airspace.

5.8 In 2017 (the last year for which we had audited information available at the time of our draft proposals) NERL's en route operating costs (excluding depreciation and pensions) were approximately £350 million.[45] NERL is forecasting that these costs will increase to about £440 million (in 2017 prices) in 2022, a real increase in these costs of more than 25%, decreasing to about £425 million by the end of RP3.

5.9 In addition to the information in NERL's RP3 business plan we considered historical trends and information on cost efficiency, including that:

- NERL's operating costs per CSU from 2007 to 2017 reduced by around 2.3% per year;
- its average operating cost outperformance from 2007 to 2017 was about 5%; and
- the Performance Review Body estimated that the potential for operating and capital cost efficiencies from NERL's 2014 to 2016 baseline was around 8%.[46]

5.10 We also considered analysis undertaken by Steer/Helios on NERL's operating and capital costs, in particular where there was alignment between the

[45] For UKATS only, excluding Oceanic

[46] Annex 2. Air Navigation Service Providers: Advice on benchmarking ANSPS and EU-wide cost targets (June 2018)

Steer/Helios analysis and airspace users' feedback from the CCWG Co-Chairs' Report that NERL's forecasts were not properly justified.

5.11 Acknowledging that NERL needs to deal with quality of service issues, make progress with technology change, and push forward work on airspace modernisation, our draft proposals accepted NERL's projected cost increases between 2017 to 2019 but assumed that NERL could achieve more significant efficiencies of 2.3% per year over RP3, in line with historical trends.

5.12 Our draft proposals included efficiencies in operating costs (excluding depreciation and pension costs) totalling £71 million compared to NERL's RP3 business plan. This equated to around £14m per year or 3% of NERL's forecasts of operating costs.

**Table 5.1: NERL RP3 Business Plan operating costs vs CAA draft proposed RP3 operating costs (£m 2017 prices)**

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | RP3 |
|---|---|---|---|---|---|---|---|---|---|
| NERL RP3 BP Opex (excl. pensions) | 350 | 386 | 422 | 426 | 424 | 441 | 438 | 427 | 2156 |
| CAA draft proposals (excl. pensions) | 350 | 386 | 422 | 421 | 414 | 426 | 419 | 404 | 2084 |
| Difference | N/A | N/A | N/A | -5 | -9 | -15 | -19 | -23 | -71 |

Source: CAA

## Stakeholder feedback

5.13 NERL said our draft proposals would provide insufficient funding for all the resources needed to deliver the service, technology and airspace modernisation programmes its customers required, and would remove the coherence and flexibility of its plan. NERL considered it would only be able to meet the service performance targets by delaying by several years its technology and airspace programmes, with these delays creating significant additional indirect costs for its customers in future years.

5.14 It also said that our draft proposals had not included any costs for the Airspace Change Organising Group (ACOG) which will provide project management support, technical support and a communications team for the airport modernisation strategy. It said these costs were included in its wider plan, rather than its core plan, and would amount to about £15 million over RP3.

5.15 NERL suggested that our proposals would lead it to incur additional restructuring costs of up to £10 million, as it could not achieve the cost level we had proposed through natural attrition while at the same time reskilling its existing staff base for new technology.

5.16 It also said that the top-down econometric model as used by Steer did not adequately reflect NERL's required headcount, and that NERL's management expertise provided more accurate estimates of headcount. NERL commissioned NERA to review the Steer/Helios work, and NERA said it had developed alternative econometric models that were better able to explain the variation in headcount than Steer's model. However, NERA did not produce any alternative forecasts or justification for the operating costs in NERL's business plan.

5.17 NERL said that as Steer had found its non-staff costs and pay assumptions efficient, we must have expected NERL to have a lower headcount than in its business plan. As NERL saw limited scope to employ less corporate and support staff than in its business plan, which it said had been the focus of sustained efficiency drives since the part-privatisation of NATS in 2001, so it would have to employ less operational staff than planned for RP3. This would leave it unable to take the remaining operational staff out of the operation for training on new systems and procedures, and thus unable to deliver its technology and airspace programmes to the milestones in its business plan.

5.18 IAG, Virgin Atlantic, IATA, and Ryanair broadly supported the greater ambition for cost efficiencies in our draft proposals compared to NERL's RP3 business plan. However, Ryanair considered that we should have included increased efficiencies of £91 million compared to NERL's RP3 business plan, and IAG said that insufficient rigour had been applied to NERL's overall costs.

5.19 Prospect welcomed our allowances for operational expenditure in 2018 and 2019, but said our proposals for RP3 could threaten NERL's delivery of desired outcomes, including airspace modernisation. PCS did not agree that efficiencies could be made in operating costs given the assumptions in NERL's business plan on staff costs.

## CAA final conclusions

5.20 In coming to our final conclusions we have considered stakeholder responses, and have made changes where compelling evidence has been provided or new forecasts made available since our draft proposals. Where the evidence is weaker or claims have not been sufficiently substantiated, we have considered whether on balance there is a persuasive case for change, bearing in the broader strategic context for RP3 and in particular the importance of airspace modernisation.

5.21 We note the broad airline support for our operating cost proposals (although Ryanair and IAG also said there was scope for us to assume greater efficiencies) but that airline respondents also stressed the need for NERL to deliver airspace modernisation during RP3.

5.22 As NERL has now provided justified costs for ACOG, we have allowed NERL £15 million for ACOG during RP3, which should further support airspace modernisation.

5.23 We have considered NERL's and Prospect's responses that it could not deliver the operational service and its technology and airspace modernisation programmes if we did not allow all the operational costs in its business plan. However, despite providing some explanation of what it would have to do if we did not allow all its business plan costs, NERL provided no substantive evidence to support its suggestions that its delivery of key systems would be jeopardised.

5.24 NERL's suggestions that any cost savings would need to be targeted on frontline staff do not appear to be credible. For example, NERL said it has limited scope to employ fewer corporate and support staff than forecast in its business plan. However, its business plan shows that other support staff numbers (working on activities including safety, human resources, finance, legal and communications) increased by 8% in RP2 and are forecast to increase by a further 13% during RP3. Similarly, given that NERL expects large numbers of staff to retire over the RP3 period and it envisages a large training programme for new staff, there appears to be scope for NERL to identify and achieve greater efficiencies.

5.25 Nonetheless, we recognise that the scale and importance of NERL's capital programme during RP3 (including the importance that airlines attach to airspace modernisation) will require it to have additional resilience in its staffing to train operational staff on new systems and procedures. Bearing this in mind we have decided to allow NERL its business plan forecast operating costs in full for the first three years of RP3 (2020, 2021 and 2022). In these years NERL is planning to deliver a number of important projects that will benefit users, such as new technology at its Swanwick and Prestwick centres (which will allow for the phasing out of legacy systems and provide improved contingency arrangements), the AD6 airspace change which will increase much needed capacity into Stansted and Luton, and Free Route Airspace. To implement these projects, NERL will need to train operational staff on new systems and in new procedures, thus requiring additional operating costs. Allowing NERL its business plan forecast operating costs in 2020, 2021 and 2022 will give it an additional £28 million compared to our draft proposals.

5.26 Bearing in mind the importance that all stakeholders attach to airspace modernisation, we have also decided to increase the Opex Flexibility Fund (OFF) by 20% (see paragraph 5.75 and chapter 9 for more details). This will increase the OFF to £42 million and will provide NERL with additional funding for airspace modernisation if additional efficient levels of spending are properly justified.

5.27 Our final decision on NERL's allowed operating costs is therefore to allow NERL an additional £51 million in operating costs in RP3 (£29 million extra in 2020,

2021 and 2022, plus £15 million for ACOG and an extra £7 million for the OFF) than in our draft proposals.

5.28 We have also deducted £24 million from operating costs to better align the forecast of costs with NERL's forecasts of non-regulated revenues and activities. In our draft proposals we made a significantly larger adjustment to NERL's forecasts of revenues for these matters and so this adjustment is not an additional efficiency measure. Nonetheless, it means that the difference in our adjustments to NERL's business plan operating costs over RP3 between our draft proposals and these final decisions is £26 million (as shown in table 5.2 below) rather than £51 million.

5.29 Bearing these extra cost allowances in mind it is essential that NERL provides a high quality service to users and plays a leading role in the delivery of airspace modernisation. We expect to hold NERL to account on these matters, including by the new arrangements for capital investment delivery incentives discussed later in this chapter.

**Table 5.2: CAA final decision vs NERL RP3 Business Plan and CAA draft proposals (£m)**

| | 2020 | 2021 | 2022 | 2023 | 2024 | RP3 |
|---|---|---|---|---|---|---|
| NERL – Business Plan | 426 | 424 | 441 | 438 | 427 | 2156 |
| CAA – draft proposals | 421 | 414 | 426 | 419 | 404 | 2084 |
| Difference between draft proposals and Business Plan | -5 | -10 | -15 | -19 | -23 | -71 |
| CAA – final decision | 425 | 423 | 440 | 418 | 404 | 2111 |
| Difference between final decision and Business Plan | 0 | 0 | 0 | -20 | -24 | -45 |

Source: CAA

## Non-regulatory revenues and costs

5.30 Under the single till calculations that are used to set the price control, our forecasts of NERL's costs and revenues encompass certain non-regulated activities. These non-regulated activities include NERL's Future Military Area Radar Service (FMARS) contract with the MOD, services to North Sea helicopters and services provided to NATS' subsidiary NATS Services Ltd (NSL). This revenue does not encompass the airport terminal air navigation services (TANS), which NSL receives directly from its contracts with airports.

5.31 Given that the costs of providing these non-regulated activities are contained in NERL's business plan forecasts of costs then it is important that the price control is based on robust and complementary forecasts of non-regulated revenues.

## CAA draft proposals

5.32 To date NERL's non-regulatory revenue has exceeded the projections made for each year of RP2, with outperformance of around 19% in 2017 (in 2017 non-regulatory revenue was £115 million).

5.33 NERL's RP3 business plan forecast its non-regulatory revenue would fall by over 15% by the end of RP2 and continue to fall during RP3, from £97 million in 2020 to £91 million by 2024, reflecting:

- under the FMARS contract the MOD pays for shared use of NERL's infrastructure. The current contract was agreed in 2006 and runs to 2021. As NERL's cost base had reduced since 2006, it expects the value of the contract to reduce by up to 10% in real terms;
- revenue from providing air traffic service to North Sea helicopters supporting the oil and gas and offshore renewables industries is projected to remain relatively flat over RP3;
- revenue from activities that NERL undertakes from intercompany transactions with NSL is projected to decline over RP3 due to a reduction in expected work from NSL; and
- SESAR funding and external business revenue are expected to reduce in RP3, largely due to the SESAR Deployment Manager becoming a separate legal entity.

5.34 In coming to our draft proposals, we commissioned CEPA to review NERL's approach to cost allocation and assess the reasonableness of its forecasts of non-regulatory revenue.[47] CEPA did not identify any material irregularities or omissions, but did conclude that NERL's processes for identifying commercial opportunities and charging a market-based return could be more transparent and there may be scope for more ambition in respect of the future levels of non-regulated revenues. A similar point was raised in the CCWG Co-Chairs' Report.

5.35 For revenue from the FMARS contract, in our draft proposals we used a ready reckoner provided by NERL to re-estimate the contract revenue based on the Determined Costs in these draft proposals. Given the reductions in operating costs, depreciation and allowed returns, we calculated revenue from the FMARS

[47] CEPA, NERL's Cost Allocation and Non-Regulatory Income Forecasts, December 2018

contract to be £13 million lower than in NERL's RP3 business plan (£215 million).

5.36 With respect to other non-regulated revenue we assumed smaller reductions in the forecast level of non-regulatory revenue from the actual level in 2017 compared to NER's business plan, in part reflecting the lack of proper evidence provided by NERL that the reduction in non-regulated activities was reflected in its business plan costs. This involved assuming NERL would generate non-regulatory revenues that were £49 million higher over RP3 compared to its business plan forecasts. We noted that we expected NERL to provide significantly better information on these costs and revenues in response to our draft proposals.

5.37 Taking these adjustments together led to a net increase in non-regulatory revenue of £35 million over RP3 compared to NERL's business plan.

## Stakeholder responses

5.38 NERL said we should remove the whole £49 million adjustment and set the non-regulatory revenue in line with its RP3 business plan, stating:

- it would not be feasible to increase non-regulatory revenue in RP3 above NERL's RP3 business plan. NERL would need to reduce its operating costs by a further £49 million, which is not plausible and would lead to further delays for air traffic and risk of technical failures;
- the proposed level of non-regulatory revenue would impose risks on NERL and limit its ability to deliver for users;
- the greatest benefit from non-regulatory revenue comes from the sharing of infrastructure, where the MOD is the only obvious customer; and
- in the absence of more infrastructure sharing, higher revenue would require additional costs, which are not in the CAA's proposals.

5.39 NERL also raised technical issues with our calculation of FMARS revenue which it said is overstated by about £1.4 million (£0.4 million from incorrect inflation assumptions and £1 million from the allocation of non-staff and pension deficit costs).

5.40 Following clarification questions from the CAA on the cost reductions associated with the reductions in non-regulatory revenue shown in NERL's business plan, it provided a table and commentary showing £13 million p.a. reduction in direct costs when comparing between 2017 and RP3 forecasts, associated with the £19 million p.a. reduction in non-regulatory revenue over the same period. This cost reduction included £7 million p.a. reduction for no longer undertaking the SESAR Deployment Manager role and £5 million p.a. for reduced sales and support to NSL.

5.41 IAG supported our increase in forecast non-regulatory revenues and suggested greater adjustments could be made depending on justification from NERL. IAG also raised concerns with transparency around cross-charging and previous outperformance on non-regulatory revenues.

5.42 PCS expressed concerns that we were pushing NERL to expand its commercial business which would distract it from providing its core business activities, and requested that we provide further evidence to support our assumptions.

5.43 Prospect were concerned that the proposed increase in non-regulatory revenue was a proxy for further cost reduction. Prospect noted that while there may be some cost savings and efficiencies, there will not be direct savings on a one-to-one basis as NERL infrastructure will still be required to provide various regulated services.

## CAA final conclusions

5.44 We have corrected the technical issues raised by NERL around FMARS revenue and used the ready reckoner provided by NERL to re-estimate the contract revenue based on the Determined Costs in these final proposals. This reduces non-regulatory revenue by £13 million over RP3 compared with NERL's business plan forecasts.

5.45 For London Approach revenue, we have made two changes to our approach in our draft proposals:

- we have reduced London Approach revenue by the percentage difference in en route Determined Costs between our final decisions and NERL's RP3 business plan. This reduces non-regulatory revenue by £4 million over RP3 compared with NERL's RP3 business plan;[48] and
- as set out in chapter 8, we are including Biggin Hill in the scope of the London Approach service. This reduces non-regulatory revenue by less than £1 million over RP3 compared with NERL's RP3 business plan.

5.46 For other areas of non-regulatory revenue, we consider that the further evidence from NERL to show the reduction in costs associated with the reduction in non-regulatory revenue supports a moderation in the adjustment to non-regulatory revenue we made in the draft proposals. Nonetheless, we consider that NERL has not provided evidence to demonstrate that the cost reductions associated with reductions in non-regulatory revenue have been fully taken into account in its RP3 business plan. For example, we would have expected NERL to have

[48] In the draft proposals, we were waiting on further information from NERL so did not make this adjustment. If we did not make this adjustment in our final proposals, we would be allocating a higher proportion of costs to London Approach than in NERL's RP3 business plan, resulting in higher charges

provided comprehensive evidence to show the impact of the cost reductions on the overall RP3 cost forecasts.

5.47 Bearing the above factors in mind our final decision is to apply an operating cost efficiency of £24 million over RP3 representing half of the increase in non-regulatory revenue we applied in our draft proposals (this is about 1% of operating costs excluding pensions). In our draft proposals, we were clear that the £49 million efficiency adjustment to non-regulatory revenue reflected the potential both for cost savings and revenue increases, but for simplicity we applied the efficiency adjustment to non-regulatory income. Our final decision applies the adjustment to operating costs, to reflect our judgement that NERL has not properly demonstrated how cost reductions associated with changes in non-regulatory revenue are reflected in its business plan.

5.48 We consider our £24 million efficiency adjustment to be conservative, as it is much lower than the overall reduction that NERL forecasts in non-regulated revenue. NERL may also have the opportunity to increase its non-regulatory revenue and outperform our efficiency targets in RP3. Nonetheless, given the strategic priority of airspace modernisation it is essential that the price control provides NERL with sufficient resources to both support airspace modernisation and deliver on its key services, and on this basis our approach appears both reasonable and proportionate.

5.49 As our £24 million efficiency adjustment is applied to operating costs, this is not shown in Table 5.3 below which focuses on non-regulatory revenue. Taking together the changes for the FMARS contract, London Approach service cost allocation and inclusion of Biggin Hill, non-regulatory revenue reduces by £18 million over RP3 in our final decision compared with NERL's RP3 business plan, as shown in Table 5.3 below. This largely reflects our lower assumptions on the returns NERL should earn (see chapter 7) and the greater efficiency assumptions set out earlier in this chapter, that feed through to FMARS and London Approach Service revenue lines.

**Table 5.3 – CAA's final decision for non-regulatory revenue (£m, 2017 CPI prices)**

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | RP3 |
|---|---|---|---|---|---|---|---|---|---|
| NERL Business Plan | 115 | 97 | 94 | 97 | 93 | 92 | 91 | 91 | 464 |
| CAA – draft proposals | 115 | 97 | 94 | 105 | 99 | 98 | 98 | 98 | 499 |
| Difference between draft proposals and Business Plan | N/A | N/A | N/A | 8.4 | 6.2 | 6.8 | 6.8 | 7.0 | 35.3 |
| CAA – final decision | 115 | 97 | 94 | 96 | 89 | 88 | 86 | 87 | 446 |
| Difference between final decision and Business Plan | N/A | N/A | N/A | -0.8 | -3.9 | -3.8 | -5.0 | -4.6 | -18.2 |

Source: CAA analysis of NERL's RP3 business plan. Note: This table excludes the CAA's efficiency adjustment for operating cost reductions associated with reductions in non-regulatory revenue.

# Pensions

5.50 Pension costs represent a significant portion of NERL's staff costs (around 25% in RP3). These costs comprise NERL's share of contributions to employer defined benefit (DB) and defined contribution (DC) schemes, as well as contributions to repair the DB scheme deficit and to a pension cash alternative for members who opted out of the DB scheme. The benefits for existing members in the DB scheme are subject to strong legal protections put in place when NATS was transferred to a Public Private Partnership. This limits the steps NERL can take to reduce its future liabilities from these arrangements.

## CAA draft proposals

5.51 We commissioned the Government Actuary's Department (GAD) to review certain aspects of NERL's pension arrangements.[49] GAD found that the NERL's DB and DC pension schemes are more generous than typical UK private sector pension schemes, and the actuarial assumptions used to calculate the DB pension costs in NERL's RP3 business plan are within a broadly reasonable range compared to wider practice in other DB pension schemes. GAD also noted that the CAA should consider whether the level of prudence in the assumptions supporting the DB scheme valuation is appropriate given that NERL supports the scheme and is a low risk regulated monopoly business.

5.52 In our draft proposals we applied an efficiency adjustment of £36 million to NERL's assumption of DB pension deficit repair payments beyond 2022 to reflect the potential for lower levels of prudence at future valuations. This adjustment was designed to properly reflect the strong regulatory protections around pension costs, the reasonable possibility of a surplus arising at the next pensions valuation for 2020 and the lack of information or comfort from NERL around how the risk of a trapped surplus would be managed in the interests of customers. We noted that these costs would, in any case, be subject to pass-through under the EU regulations where cost changes relate to unforeseen changes in financial market conditions.

5.53 We also made a £12 million adjustment to ongoing pension costs in line with the broader efficiency adjustments we applied to NERL's on-going operating costs.

## Stakeholder responses

5.54 NERL raised several concerns around our proposals, including that:

[49] Government Actuary's Department, Analysis of pension costs for NATS (En Route) plc, 24 September 2018

- we were incorrect in assuming there is scope for a lower level of prudence in valuation assumptions;
- there is not a reasonable possibility of a surplus arising at the next valuation in 2020. NERL's most recent evidence from the 2018 annual update from the pension scheme's actuary shows market conditions have deteriorated since GAD's report. The annual update reports a deficit increase from £270 million at end 2017 to £433 million at end 2018, which is c.£200 million worse than previously expected;
- our assumptions in regulatory settlements from 2006 to 2018 have been systematically optimistic and NERL has had to make higher contributions than assumed;
- our draft proposals do not appear to take account of the duties of trustees and the process between trustees and company if a surplus arises;
- the proposed reduction in pension deficit costs in RP3, together with rising deficit and past under-recovery will increase charges to customers beyond RP3, and recommended that we consider whether this is equitable; and
- our proposals could cause the trustees to adopt a higher margin for prudence and require NERL to pay higher contributions.

5.55 NERL considered that we should allow the full £36 million of projected deficit repair payments from 2022. It did not raise issues with adjusting ongoing DB and DC costs in line with any efficiency adjustments applied to operating costs.

5.56 IAG supported our reductions in DB and DC pension costs, and IATA broadly supported our approach to pension costs.

5.57 PCS said we should not assume it will be possible for the pension deficit repair plan to end by 2022 and that we should not attempt to influence the assumptions trustees/actuaries make regarding the pension scheme. Once the scheme is fully funded, PCS said it is confident that NERL and pension trustees will agree plans to reduce costs to the company and customers.

5.58 Prospect said we had insufficient evidence to support our conclusions on deficit repair costs and the treatment of any surplus, and only when a surplus is generated should discussions be held with stakeholders to determine the appropriate course of action.

## CAA final conclusions

5.59 To support our final conclusions, we asked GAD to review the 2018 annual update from NERL. GAD's review concluded that:[50]

- the results of the annual update appear reasonable given the assumptions adopted at the 2017 valuation and market conditions as at end 2018, particularly the increase in deficit as a result of poor performance of equity markets;
- it appears that higher than expected pay increases awarded in 2018 have increased the deficit by £20 million;
- equity markets have since recovered between January and April 2019 as measured by FTSE all share total return index. However, in response to a question from GAD, NERL has stated that the deficit position has not changed significantly to end March 2019 as positive investment performance has been offset by an increase in liabilities due to a fall in real interest rates; and
- taking the above points together, GAD highlights the inherent volatility of financial markets and the funding position.

5.60 GAD also estimated the approximate returns required to reach full funding at the 2020 valuation under three scenarios, to inform our view of the likelihood of a surplus arising at the 2020 valuation and given pension deficit payments ending in 2021. GAD found that this required annual investment returns up to the 2020 valuation to increase from Gilts+2.75% in the 2017 valuation to around Gilts+5.5% based on the 2018 annual update, or around Gilts+3% if the post-retirement discount rate improved by 0.25% as a result of the regulatory policy statement (discussed further below). Overall, this suggests that the likelihood of a surplus arising at the 2020 valuation has reduced since draft proposals, though there remains a significant degree of uncertainty about these matters.

5.61 GAD also reviewed the guiding principles for long-term planning agreed between NERL and trustees.[51] GAD considers its earlier comments around the surplus remain relevant:

- the long-term target for investment returns suggests priority will be given to utilise a surplus by de-risking the investment strategy rather than reducing employer contributions, where de-risking could lead to a reduction in the discount rate, which would be expected to increase the employer contribution rate but reduce the likelihood of a deficit re-emerging; and

[50] Government Actuary's Department, Review of further evidence provided by NERL, June 2019

[51] Government Actuary's Department, Review of further evidence provided by NERL, June 2019

- the guiding principles makes no reference to how the risk of a trapped surplus would be managed in the interest of customers.

5.62 The new evidence from NERL on the pension position at end March 2019 does appear to suggest that the likelihood of a surplus arising at the 2020 valuation has materially reduced since our draft proposals. However, NERL has not provided any new evidence in response to our concerns around how customers will benefit if a surplus arises in RP3.

5.63 Overall, we consider that our final decision should take into account this new evidence from NERL but balance this against the concerns we noted in our draft proposals. These include the importance of considering users' interests directly and transparently in forming the investment strategy, the issues around trapped surpluses and the benefits to the scheme of a stable regulatory regime, which we comment on further below in the context of the regulatory policy statement. We also note GAD has raised an additional issue where an unexpected increase in pensionable pay appears to have increased the pension deficit by £20 million, which should be within NERL's control.

5.64 On this basis, our final decision is to reduce our efficiency adjustment for defined benefit pension deficit repair costs by half, from £36 million in our draft proposals to £18 million (representing one year of forecast costs in NERL's RP3 business plan).

5.65 We note that any efficient pension deficit repair costs in RP3 above or below the cost allowance due to unforeseen financial market conditions will be subject to the pass-through mechanism set out in the performance regulation.[52] Therefore, the adjustment that we are proposing to the costs is a judgement about what amount customers should fund upfront, but the pass-through mechanism provides protection to NERL if financial market conditions change. We have reflected these strong protections in considering the appropriate cost of capital for NERL in RP3, as discussed in chapter 7.

5.66 During RP3, we would expect NERL to consult with airspace users and provide greater transparency around how users' interests are considered in its discussions with the trustees.

5.67 Similar to our draft proposals, we have continued to apply an efficiency challenge to ongoing DB and DC pension costs in line with the efficiency adjustments to overall operating costs. This is an efficiency reduction of £6 million to ongoing pension costs in NERL's RP3 business plan.

[52] See Chapter 9 – Uncertainty mechanisms

5.68 Taken together, the total efficiency reduction to NERL's pension costs is £24 million in our final decision, reduced from £48 million in our draft proposals. This is shown in Table 5.4 below.

**Table 5.4 – CAA's final decision for en-route pension costs (£m, 2017 CPI prices)**

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | RP3 |
|---|---|---|---|---|---|---|---|---|---|
| NERL Business Plan | 80 | 74 | 70 | 89 | 88 | 87 | 85 | 66 | 416 |
| CAA – draft proposals | 80 | 74 | 70 | 88 | 87 | 67 | 64 | 62 | 368 |
| Difference between draft proposals and Business Plan | N/A | N/A | N/A | -1.1 | -1.8 | -20.3 | -21.0 | -3.5 | -47.6 |
| CAA – final decision | 80 | 74 | 70 | 89 | 88 | 87 | 65 | 62 | 392 |
| Difference between final decision and Business Plan | N/A | N/A | N/A | -0.1 | 0 | -0.1 | -20.7 | -3.2 | -24.0 |

Source: CAA analysis of NERL's RP3 business plan. Note: as set out in NERL's RP3 business plan Appendix H (page 50), values for cash pension contributions in RP2 reflect the allowances/assumptions made by the CAA, as cost exempt true-ups in relation to pension costs affect prices only, not Determined Costs

## Regulatory Policy Statement

5.69 In its RP3 business plan, NERL provided a draft of a possible Regulatory Policy Statement (RPS) pertaining to pension costs.[53] NERL said this would allow the trustees of its pension scheme to place greater reliance on the employer's covenant, targeting higher investment returns that would lower its expected long-term pension contributions and so prices to users.

5.70 A letter from the chair of the trustees in January 2019 to the CAA[54] says that a weakening of the regulatory framework covering NERL's pension costs, which they suggest could arise from the lack of clarity around the continued application of the regulatory framework under the performance scheme, may result in a one-notch downgrade of the sponsor covenant which could justify a 25 basis point reduction in the trustees' assumption on long-term returns. The letter suggests an appropriately drafted RPS could provide greater certainty and avoid a reduction in the assumption on returns.

### CAA draft proposals

5.71 In our draft proposals, we said that it is in the best long-term interest of customers to continue to stand behind NERL's covenant to honour its pension

53 Set out in NERL's RP3 business plan in Appendix O

54 Letter: Joanna Matthews (Chair of CAAPS trustees) to Richard Moriarty (CEO, CAA) dated 7 January 2019

commitments and provide for the efficient costs of NERL servicing these obligations. This should not only reduce NERL's wider business risks (and so its cost of capital) but also support the trustees of the pension scheme making appropriately prudent assumptions in valuing the scheme's assets and liabilities such that overall costs to consumers are reduced in the short and medium term.

5.72 Our draft proposals sought stakeholder views on the possibility of introducing a RPS in respect of pensions, which could reinforce our commitment to stand behind NERL's covenant to honour its pension commitments. For RP4 we would then have the opportunity to make assumptions consistent with this in assessing the future levels of NERL's DB pension contributions. We would base our allowances on the costs that would derive from the trustees applying assumptions that properly reflected the low risk nature of NERL's business and the strength of the covenant given the RPS. Other things being equal at RP4, this would lead to assumptions for higher levels of future investment returns and lower contribution rates. The pension scheme trustees are independent of the CAA, but it would be open to them to adopt an equivalent approach to their valuation of the scheme's assets and liabilities.

5.73 However, we were concerned that neither NERL's business plan nor the letter from the trustees had articulated or quantified a positive benefit in reduced costs to customers from the introduction of such a statement.

## Stakeholder responses

5.74 NERL was supportive of an RPS, stating that this would provide potential customer value by strengthening the covenant. NERL considered that agreeing an RPS will allow the trustees to sign up to less prudent assumptions as greater reliance can be placed on NERL's covenant, which should enable the trustees to target higher investment returns, in turn reducing the assets needed to pay Scheme benefits by around £400 million, allowing the Scheme to be fully funded more quickly and reducing costs to users. This was based on targeting the long-term funding objective of gilts+0.5% over 15-20 years (compared with gilts+0.25% currently targeted).

5.75 IAG was not averse to an RPS but would need more detail on what we intend before taking a view.

5.76 PCS supports an RPS, which it considers will help the trustees to better manage the scheme and current deficit. Prospect supports the RPS as being in the long-term interests of customers

## CAA final proposals

5.77 We have sought independent legal advice from Norton Rose Fulbright on the RPS and concluded that:

- an RPS is likely to be in the long-term interest of users, who would, all else equal, face lower charges as a result to pay for the DB deficit;
- it would also be consistent with the guidance of the Pension Regulator (TPR) for trustees and employers to agree a strategy for achieving their long-term goal, such as a long-term funding target. The Government may also introduce a requirement for schemes to have a specific long-term goal and an RPS could also be consistent with such obligations;
- the RPS should not be unduly restrictive. As a long-term document it should be sufficiently flexible to take account of reasonably foreseeable changes circumstances, e.g. potential changes by TPR to the regulatory regime on funding, future scheme valuations, or requirements for RP4; and
- it should be possible to strike a balance that provides the comfort the trustees seek while not unduly restricting the CAA in future reference periods.

5.78 Bearing all of the above in mind, we therefore support the principle of an RPS and will engage with NERL, the pension trustees and wider stakeholders on the drafting shortly. We plan to have the RPS in place ahead of the next triennial valuation of the NERL scheme in December 2020.

5.79 We will take account of the use of any surplus that arises in RP3 and the response to the RPS at RP4.

## Capital expenditure

5.80 This section sets out our final decision on capital expenditure, which is recovered through allowances for regulatory depreciation and allowed returns in the calculation of Determined Costs. We provide further details on regulatory depreciation and allowed returns in chapter 7.

5.81 NERL's business plan includes a capital programme involving the continuing replacement and upgrade of its base technology platform, in part to support airspace modernisation. Our final decision reflects that both the upgrade of its technology systems and airspace modernisation are important to the future of UK aviation.

### CAA draft proposals

5.82 NERL's business plan proposed a capital investment programme with a similar level of investment to RP2, with expenditure (in 2017 prices) forecast to total £782 million in RP2 and £763 million in RP3.

5.83 The CCWG Co-Chairs' Report noted that while airlines agreed with the broad thrust and scope of NERL's capital programme, they felt they lacked the information to assess whether NERL's proposed costs were reasonable.

Airspace users were concerned that airspace changes planned for the last year of RP3 could slip into RP4 and suggested that there might be scope for a greater emphasis on process redesign and efficiency gains.

5.84 The Steer/Helios study summarised the key features of NERL's capital expenditure programmes for RP3:

- replacement of old systems is the central benefit driver of RP3 with airspace modernisation only planned to deliver benefits in the last year of the period;
- the new systems allow ANS to be provided for a higher level of traffic with similar performance outcomes; and
- airspace change follows technical deployment, and therefore many of the benefits are expected in RP4 and beyond.

5.85 Steer/Helios noted that the NERL business plan gave qualitative detail and information on the proposed capital programme in RP3, but it did not allow for the:

- traceability of quantitative benefits at a sub-programme level;
- testing of whether the benefits proposed are appropriate or underplayed;
- assessment of cost efficiency; nor
- understanding of programmatic risks and their impact.

5.86 Steer/Helios considered that more adaptability in the capital expenditure plan could reduce risk and allow efficiency to be better tested. They suggested what they described as a 'feasible scenario' that took into account:

- benchmarking of RP2 spend;
- the viability and deliverability of programme plans; and
- uncertainty of longer term programmes in terms of cost, benefit and need.

5.87 This possible scenario included reductions in spending as set out in Table 5.5 below.

**Table 5.5: NERL RP3 Business Plan and Helios Feasible Scenario capital expenditure in RP3 (2017 prices)**

| | NERL RP3 business plan (£m) | Helios feasible scenario (£m) |
|---|---|---|
| Airspace modernisation | 115 | 115 |
| Delivering capability (DSESAR) | 299 | 220 |
| Technical resilience | 144 | 124 |

| | NERL RP3 business plan (£m) | Helios feasible scenario (£m) |
|---|---|---|
| Service improvements | 37 | 30 |
| Business resilience | 88 | 55 |
| Contingency | 34 | 34 |
| Total capital expenditure[55] | 715 | 579 |

Source: Steer/Helios, NERL business plan numbers do not include £23 million NERL said it had accelerated into RP2.

5.88 Bearing in mind the importance of airspace modernisation, our draft proposals allowed all of NERL's forecast airspace modernisation capital expenditure.

5.89 In respect of other categories of spending we considered carefully the information in NERL's business plan, the findings of Steer/Helios and the conclusions of the CCWG Co-Chairs' Report about the lack of information on options, efficiency and benefits associated with NERL's capital programme.

5.90 The Steer/Helios feasibility scenario identified possible savings across NERL's DSESAR and non-core programmes[56] of some £136 million, with £34 million of contingency in NERL's plans. However, we recognised the high-level nature of the Steer/Helios work and the importance that NERL's customers place on receiving a high-quality service. We noted that there is a degree of uncertainty over the level of efficient spending.

5.91 Our draft proposals assumed that NERL would be able to realise approximately £50 million of capital expenditure savings over RP3 – this equated to NERL spending all of its forecast airspace modernisation costs and 92% of its other forecast capital expenditure costs (including the £34 million it had identified as contingency).

**Table 5.6: NERL RP3 Business Plan capital expenditure vs CAA draft proposed RP3 capital expenditure (£m 2017 prices)**

| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | RP3 |
|---|---|---|---|---|---|---|---|
| NERL Business Plan | 142 | 193 | 173 | 114 | 102 | 132 | 715 |
| CAA – draft proposals | 142 | 179 | 162 | 108 | 96 | 122 | 667 |
| Difference between draft proposals and Business Plan | N/A | -14 | -11 | -7 | -7 | -10 | -48 |

Source: CAA. NERL Business Plan numbers do not include £23 million NERL said it had accelerated into RP2.

55 The difference between the total and the sum of the individual programmes is due to rounding

56 Non-core programmes are technical resilience, service improvement and business resilience

## Stakeholder feedback

5.92 NERL said that our draft proposals would lead to it incurring stranded or restructuring costs, and that we had shown no evidence to support our suggestion that we had a lack of confidence in its capital expenditure forecasts. It also noted that we had failed to do an impact assessment or analyse the trade-offs from allowing less capital investment than in its business plan. NERL also considered we had placed undue weight on the Steer/Helios report and had not taken account of customer support for the scope of its capital expenditure programme.

5.93 IATA, BA and Virgin Atlantic supported our capital expenditure proposals. Ryanair considered that we should have proposed the Steer/Helios feasible scenario of £579 million.

5.94 Prospect considered that not allowing all NERL's business plan capital expenditure would lead to redundancies. PCS considered that we had not sufficiently justified our reduction to NERL's business plan capital expenditure.

## CAA final conclusions

5.95 Given the absence of new evidence from NERL our final decision is to maintain the capital expenditure allowance set out in our draft proposals with our projection of capital expenditure reduction of £48 million for RP3 compared to NERL's business plan. We consider this allowance sufficient for NERL's to deliver its full plan.

5.96 As we have previously noted the regulatory framework for NERL allows the recovery of the costs of efficient capital expenditure from consumers. If NERL spends more than we have allowed and can provide evidence that clearly demonstrates the efficiency of its spending, then the additional costs will be allowed for at the RP4 review (by making an adjustment to its starting RAB).

5.97 Given the above, NERL's comments on the adjustments we made at draft proposals and the lack of an impact assessment do not appear relevant or constitute compelling evidence such that we should change approach.

5.98 Consistent with the regulatory treatment of capital expenditure noted above we will conduct an ex-post review of NERL's RP2 capital expenditure early in RP3 to decide whether there is sufficient evidence that the spending has been efficiently incurred to justify customers continuing to fund the expenditure.

## Strengthening the governance arrangements

5.99 Early in RP2 the scope of NERL's capital expenditure programme changed significantly with forecast costs increasing by about 25%. Airspace users said they had little opportunity to challenge either the scope or cost of the revised programme, with NERL providing insufficient evidence on the benefits of the

revised programme, different options and risks. NERL made some incremental improvements to the transparency of its SIP during RP2 and has proposed some further improvements for RP3, including providing users with more regular updates and introducing an escalation process when NERL and users do not agree on proposed changes. Nonetheless, customer feedback during the RP3 preparations suggest that NERL is not yet providing airspace users and other stakeholders with an appropriate degree of comfort with respect to its capital expenditure plans.

## CAA draft proposals

5.100 Taking into account NERL's proposed enhanced capital expenditure governance proposals for RP3, the views of airlines during customer consultation and the Independent Reviewer's views on capital expenditure governance, we proposed the following measures to strengthen the governance arrangements for NERL's capital programmes:

- NERL to provide airspace users with timely and regular updates on its approach to options appraisal, before it makes its final decisions to commit to major projects;
- if NERL and airspace users cannot agree on a preferred option, an escalation process to senior stakeholders (depending on the issue this would be to either or a combination of CAA, DfT and airports and airlines) would be triggered with a view to reaching a consensus on the best way forward;
- the role of the Independent Reviewer would be enhanced to include assessing how well NERL has explained and justified its capital programme in its SIP, as well as reviewing its reporting;
- the Independent Reviewer will report both to the CAA and airspace users, and these reports will also help inform our decision on whether capital spending should be allowed following our ex-post reviews of capital efficiency (with any spending not supported by persuasive evidence of efficiency at risk of dis-allowance from NERL's RAB); and
- if there are significant weaknesses in NERL's ongoing provision of information on its capital spending then any overspend during RP3 would only be remunerated at its cost of new debt finance (rather than the full cost of capital) during RP3, even if it were to subsequently pass an efficiency test.

5.101 Bearing in mind our proposed full allowance for airspace modernisation costs, and the critical importance of NERL effectively fulfilling its role in this work, we also noted we were considering bringing forward a licence modification that

would give NERL an obligation to support and drive forward airspace modernisation.

5.102 We also supported NERL's business plan proposal that its enhanced SIP governance process could also be used to reach decisions on expenditure from the Opex Flexibility Fund (OFF), subject to our strengthening proposals and ensuring proper links with the Airspace Modernisation Strategy (AMS). These matters are discussed further in Chapter 9.

## Stakeholder feedback

5.103 NERL considered that our additions to its proposed capital expenditure governance enhancements would constrain its ability to manage its capital programme, restrict access to contingency funds, add costs and delay and reduce NERL's accountability for its spending.

5.104 IAG, IATA, Virgin Atlantic and Ryanair supported improvements to capital expenditure governance. Heathrow Airport Limited (HAL) noted that our proposals were similar to the framework used at Heathrow airport.

## Developments since our draft proposals

5.105 Since our draft proposals we have shared a working note with stakeholders on capital expenditure governance and, following responses by stakeholders, circulated a draft note on policy and processes for the governance of capital expenditure and the two AMS funds (the OFF and the AMS Support Fund (ASF)).[57]

5.106 We have also said that policy and processes should be guided by the following key principles:

- NERL's accountability for its capital expenditure
- While NERL needs to consult with users in an open and transparent manner, and take user's views in to account, in general it is for NERL to make final decisions on its capital expenditure programmes. Nonetheless, in relation to AMS spending the co-sponsors (CAA and DfT) can direct NERL to undertake certain projects or expenditures;
- NERL is accountable for demonstrating that its costs have been efficient, that it has invested in time to meet users demands and its investment provides the expected benefits for users. Where NERL's capital expenditure is efficiently incurred it should be added to its RAB; and

[57] These are published on our website.

- NERL should be financially incentivised to spend capital efficiently and to deliver projects on time that provide appropriate outcomes for users.
- NERL's engagement with users
- NERL should provide an appropriate level of information to enable airspace users and other stakeholders to comment on the costs, options, delivery, benefits and risks associated with its capital expenditure and requests for OFF funding. When NERL proposes material changes to what it invests in, the expected costs of the investment, the expected time that the investment will enter into operation, and the benefits of the investment to users, it needs to explain the changes to users and, where practicable, gain their agreement to the changes; and
- NERL should be financially incentivised to provide high quality information to users and other stakeholders that explains the options it has considered with respect to capital programmes, provide comfort that costs will be incurred efficiently and quantifies the benefits to users from its spending. If there are projects where the spending exceeds the budget then NERL should provide evidence that the spending is efficient.
- Robust and flexible processes
- the capital expenditure and funds governance processes that NERL uses should be easily understood and workable, avoiding unnecessary complications and command broad acceptance from stakeholders; and
- NERL should take ownership of the processes and, in agreement with users, ensure that they evolve over time to reflect the consensus views of airspace users, other stakeholders and NERL on their usefulness and ease of use.

5.107 In our further engagement with stakeholders we have built on our draft proposals and suggested:

- that the use of the capital expenditure contingency allowance will be subject to the enhanced governance process, but with the final decision on spend taken by NERL;
- that NERL and airlines should develop an agreed process for bringing forward projects for OFF funding for our approval. Where NERL and users agree that an activity should be funded from the OFF, we will approve its use unless there are compelling reasons to refuse. NERL can present a case for funding without support from users but the onus would be on NERL to justify the use of OFF funding; and

- a process for the use of the ASF to fund projects that are important to the success of the AMS and where there are no other appropriate mechanisms for recovering costs.[58]

**Capital expenditure delivery incentive**

5.108 We have also consulted stakeholders on a financial incentive on NERL's capital expenditure. This will involve a general assessment of NERL's investment performance and the successful delivery of its plan in full, with a particular focus on the implementation of:

- DP (en route) and DP (lower) technology changes to provide a common platform for the Swanwick and Prestwick centres;
- AD6 airspace change to increase capacity to Stansted and Luton airports; and
- LAMP airspace changes to modernise airspace in South-East England, in the context of the airspace change masterplan.

5.109 The Independent Reviewer will produce an annual report on NERL's capital expenditure delivery to inform the application of the above delivery incentive. The incentive will be capped at a £36 million penalty (2017 CPI prices) and would take the form of a reduction in NERL's revenue or opening RAB for RP4.

5.110 We are proposing the capital expenditure delivery incentive to hold NERL to account to deliver its programme in the strategic context of airspace modernisation. In doing so we have borne in mind that some of NERL's projects that should produce the greatest benefit to users (such as LAMP airspace change and DP (en route)) have been delayed in RP2. We have also taken into account the importance to users of NERL delivering in relation to airspace modernisation and the extra funding we have made available to NERL as part of these final decisions.

5.111 These arrangements are not intended to constrain NERL's actions in an inappropriate way. For instance, it would be perverse if a delivery incentive tied NERL to a programme that no longer reflected customer requirements and the economic environment. We are prepared to amend the specific milestones in the incentive if there is sufficient evidence that changes will benefit users but our starting assumption is that NERL delivers in full its RP3 investment plan.

5.112 NERL, IATA and Virgin Atlantic responded to our draft policy and processes note. In addition to its comments on our draft proposals, NERL objected to the proposed capital expenditure delivery incentive. More generally, respondents

[58] The ASF is financed from the CAA's Determined Costs, and the process for its use is outside the scope of NERL's enhanced SIP process

wanted us to clarify some of our proposed processes. Taking these comments into account, we have updated our policy and processes document and the latest draft is set out in Appendix I.

## CAA final conclusions

5.113 We welcome NERL's proposals for enhanced capital expenditure governance in RP3. Nonetheless, we do not agree with NERL's suggestions that our proposals would add cost and delay and potentially dilute NERL's accountability for its overall capital investment programme. We are clear that NERL is responsible for its spending (including the use of contingency), but increased transparency is essential to ensure that NERL is also held to account for its spending. To this end we welcome NERL's commitment to set an agreed baseline for RP3, against which its performance can be tracked on a consistent basis throughout the reference period. The baseline must reflect NERL's full RP3 investment plan.

5.114 We expect NERL and users to take ownership of the programme and governance processes and any changes to them. NERL should be pro-active in seeking user agreement to any changes in its capital expenditure programme during RP3. In seeking user agreement we expect NERL to engage with a broad base of users, including full-service and budget airlines. If a change will only affect a sub-set of users (for example, users at a particular airport) it may be appropriate for NERL to adopt a more focused consultation.

5.115 We will be open to changes in the governance processes that NERL proposes and can demonstrate support for from a broad base of users. Although the scale of spend is higher at Heathrow Airport, the process used to engage users in HAL's capital programme may provide some useful examples that would also be applicable to NERL. More generally, the extent of our involvement in NERL's capital expenditure governance in RP3 will depend on the extent to which NERL engages with users on an open and transparent basis, gaining their trust and support. To take advantage of this opportunity for less regulatory involvement, NERL will need to make a step-change in its engagement with users, taking an open, positive and pro-active approach, and avoid defensive and reactive positions.

5.116 Our final decision is to develop the governance arrangements set out in our draft proposals and our draft policy and process note, including by:

- introducing a capital expenditure delivery incentive to NERL's licence that will hold NERL to account for the delivery of its capital expenditure programme as a whole, and in particular the airspace and technology programmes that should provide the greatest benefits to users;

- the Independent Reviewer shall undertake an annual assessment of NERL's capital expenditure delivery to inform the application of the incentive which will be capped at a maximum of a £36 million penalty for RP3;
- modifying NERL's licence to require it to supplement its current annual and interim SIPs, with quarterly updates (based on the dashboard in its 2019 interim SIP taking into account users' comments), and to make clear that it needs to consult users on new programmes and projects (with an estimated spend of over £10 million) while they are still in the process of inception and options appraisal;
- supporting NERL's suggested escalation process to CAA and other senior stakeholders as appropriate when NERL and users cannot agree on new projects and changes to existing projects. We would in particular consider whether NERL and airlines had followed good processes to consider changes to the plan;
- enhancing the role of the Independent Reviewer to include assessing how well NERL has explained and justified its capital programme in its SIP, to report on the cost efficiency of NERL's capital expenditure, and to report on NERL's delivery of its investment programme and associated benefits; and
- remunerating any over spend during RP3 by NERL's cost of new debt finance rather than its full cost of capital, if there are significant weaknesses in NERL's ongoing provision of information on its capital spending programmes.

## Overall Determined Costs

5.117 The overall Determined Costs for NERL are shown below in Table 5.7, including how these compare with actual and forecast costs in RP2. The detail on regulatory depreciation and regulatory return can be found in Chapter 7 on financeability.

**Table 5.7: Summary of RP2 historical and CAA proposed RP3 costs by year (£m 2017 prices)**

| RP2 and RP3 Determined Costs for en route (£m, 2017 prices) | 2015 Actuals | 2016 Actuals | 2017 Actuals | 2018 F'cast | 2019 F'cast | 2020 Final | 2021 Final | 2022 Final | 2023 Final | 2024 Final | RP3 Final |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Operating costs (excl. pensions) | 348 | 360 | 350 | 386 | 422 | 425 | 423 | 440 | 418 | 404 | 2,111 |
| Pension costs | 81 | 80 | 80 | 74 | 70 | 89 | 88 | 87 | 65 | 62 | 392 |

| RP2 and RP3 Determined Costs for en route (£m, 2017 prices) | 2015 Actuals | 2016 Actuals | 2017 Actuals | 2018 F'cast | 2019 F'cast | 2020 Final | 2021 Final | 2022 Final | 2023 Final | 2024 Final | RP3 Final |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Regulatory depreciation | 193 | 193 | 186 | 173 | 165 | 184 | 150 | 132 | 136 | 145 | 747 |
| Regulatory returns | 69 | 64 | 59 | 56 | 56 | 27 | 30 | 32 | 32 | 31 | 152 |
| Non-regulatory revenue | -106 | -115 | -115 | -97 | -94 | -96 | -89 | -88 | -86 | -87 | -446 |
| Total Determined Costs (£m, CSU) | 585 | 583 | 560 | 592 | 619 | 630 | 603 | 604 | 564 | 555 | 2,956 |
| CSUs (000) | 9,975 | 10,711 | 11,606 | 12,053 | 12,265 | 12,504 | 12,747 | 13,040 | 13,263 | 13,472 | 65,026 |
| DUC per CSU (£) | 58.61 | 54.39 | 48.25 | 49.09 | 50.47 | 50.39 | 47.30 | 46.29 | 42.51 | 41.23 | 45.46 |

Source: CAA. Note: NERL's DUCs are expressed relative to CSUs for civil flights only, as military and exempt flights are funded separately. The performance regulation requires DUCs to be expressed using TSUs, to recover the costs of both civil and military flights. To express NERL's DUC in performance scheme terms, NERL's Determined Costs are grossed up for military and exempt flight service units (the difference between CSUs and TSUs), meaning the DUC calculated using TSUs will be the same as calculated using CSUs. NERL provides further details in Appendix H of its RP3 business plan.

Chapter 6

# Overall costs

## Introduction

6.1 The performance framework requires the setting of an overall UK cost efficiency target. This is established on the basis the overall Determined Unit Cost (DUC) for en route ANS, reflecting the costs of the national en route ANSP and the costs of the other entities that contribute to the provision of en route ANS.

6.2 In addition to NERL's Determined Costs (discussed in chapter 5) we are required to report on other elements of the UK's Determined Costs, including:

- Met Office meteorological service costs that relate to UK aviation;
- the UK's share of Eurocontrol costs; and
- relevant NSA costs of the CAA.

6.3 This chapter:

- summarises the RP3 costs of each of these entities; and
- sets out the overall UK cost efficiency target.

## Components of UK unit rate: Met Office

6.4 The Met Office RP3 plan forms part of its wider corporate business plan with the provision of services to civil aviation representing about 10% of its turnover.

6.5 There was limited stakeholder feedback on the Met Office costs set out in our draft proposals. IAG suggested that less financial rigour had been applied to costs. It is noted that Met Office costs have been subject to a separate consultation process in 2018, overseen by our UK Met Authority function.

6.6 There have been no changes in costs between our draft proposals and final decision on Met Office Determined Costs, which are summarised in the Table 6.1 below. An overview of Met Office costs is set out in Appendix F.

**Table 6.1: Met Office Determined Costs in nominal and 2017 prices terms for RP3 (**£m)

| | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| National Capability | 17.0 | 17.0 | 18.2 | 22.1 | 22.1 |
| Met Service Development and Delivery | 14.0 | 13.2 | 13.4 | 13.1 | 13.3 |
| Total met Office (nominal) | 30.9 | 30.2 | 31.6 | 35.2 | 35.4 |

| | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| Total Met (2017 prices) | 29.1 | 27.8 | 28.6 | 31.1 | 30.7 |

Source: Met Office

## Components of UK unit rate: Department for Transport

6.7 The DfT component of the UK en route costs represents the UK's share of Eurocontrol's costs.

6.8 Member States are responsible for setting Eurocontrol's budget and monitoring actual expenditure. The UK has been a member of Eurocontrol's Standing Committee on Finance and has proactively supported efficiency measures designed to reduce Eurocontrol's costs in real terms over the past decade. Members States' share of Eurocontrol costs are determined by GDP and exchange rates, both of which are not under the control of Member States.

6.9 The DfT recorded a surplus of £3 million in 2017, due to exchange rate fluctuations. This surplus, together with any over- or under-recovery recorded in 2018 and 2019, will be carried forward and included as an adjustment in RP3.

6.10 DfT RP3 Determined Costs are summarised in Table 6.2 below.

**Table 6.2: DfT Determined cost in nominal and 2017 prices for RP3 (**£m)

| | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| Total (nominal) | 51.5 | 51.9 | 52.3 | 53.2 | 54.6 |
| Total (2017 prices) | 48.4 | 47.8 | 47.2 | 47.1 | 47.4 |

Source: DfT

## Components of UK unit rate: CAA

6.11 The CAA recovers staff costs, other operating costs and capital costs associated with its air navigation functions. These costs are charged directly to ANSPs and form part of their cost base.

6.12 Most of these costs relate to the airspace regulation activities of the Safety and Airspace Regulation Group (SARG). SARG's duties include the planning and regulation of all UK airspace including the navigation and communications infrastructure. In RP3 there will be an increased focus on the CAA's capability for supporting airspace modernisation.

### CAA draft proposals and stakeholder feedback

#### Increase in CAA costs

6.13 Our draft proposals included a forecast increase in airspace related costs to £17.4 million by the end of RP3, compared to £12.6 million at the end of RP2.

6.14 Stakeholder responses questioned the level of detail in our draft proposals to support CAA cost levels. IATA sought more detail; IAG questioned whether Airspace Change Proposals (ACP) levels were sufficient to drive the costs increases proposed; and NERL considered that additional saving demands were being placed on NERL, as a result of increased costs elsewhere, especially CAA.

6.15 The increase in CAA costs is largely driven by the current and expected growth in ACPs and to ensure that the CAA is adequately resourced to manage wider airspace modernisation responsibilities. Delivery of airspace modernisation is a key priority for airspace users in RP3, and our increase in staff for RP3 is intended to facilitate the delivery of this. It is noted that in response to the 2018 CAA stakeholder engagement on the draft airspace modernisation strategy,[59] several stakeholders commented on the importance of appropriate CAA resourcing for realising airspace modernisation:

- Virgin Atlantic noted that the benefits of airspace modernisation may not be fully realised without action to ensure that there are sufficient resources available to deploy the strategy including regulatory resource for management and approval of ACPs.
- GATCO noted that it is important that the CAA is adequately resourced to carry out the function [of ensuring that airspace capacity is increased safely].
- NATS noted that the time taken for airspace change and the ability of the CAA to resource CAP 1616 applications was a significant concern. NATS noted that supporting the vision and high-level objectives will place an increased demand on CAA resource and this is a key risk in realising future airspace changes. NATS noted that this risk was owned by the CAA and needed to be urgently addressed.
- Virgin Atlantic also noted it concerns with the time it is taking to realise airspace changes and the ability of the CAA to resource and manage airspace change applications.

6.16 There has been a significant increase in the number of ACP applications made in the past three years. In 2013 and 2014 there were 12 to 15 ACPs made to the CAA each year, but by 2018 this had risen to 82. CAA resourcing in the Airspace Regulation team (within SARG) has not grown at the same rate during this time, leading to a mismatch in resource capacity and demand.

6.17 We anticipate there will be a significant number of ACPs required during RP3 to support the implementation of the AMS, of varying levels of complexity that will

[59] CAP 1690 and CAP 1710

require different amounts of resource to process. For example, the FASI-South programme of airspace design changes will require action at 16 airports in Southern England.

6.18 Increases in the complexity and quantity of airspace modernisation programmes, initiatives and developments in technology have also necessitated growth in the CAA's Future Airspace Team (also part of SARG). This team is the centre of subject matter expertise, and ensuring it is adequately resourced will reinforce our capacility to manage and progress airspace modernisation, influence global developments in this area and react to change.

6.19 We plan to increase SARG Airspace staff resources in three tranches to deal with the backlog in work, and to prepare for the anticipated future increase in ACP workload and airspace modernisation:

- Tranche one is immediate posts. In 2019 this has been funded by an increase in the CAA Schemes of Charges and the DfT. Tranche one is dedicated to addressing the existing business demand for ACPs and the requirements of implementing the AMS.
- Tranche two will increase resources in 2020, and tranche three in 2021. These tranches are aimed at addressing additional ACP applications beyond the level currently experienced and necessary to support airspace modernisation.

6.20 These new SARG Airspace posts are essential to the CAA successfully meeting its regulatory and statutory commitments for the duration of RP3. Increased SARG Airspace resource will also enable us to progress key programmes such as Electronic Conspicuity and Performance Based Navigation efficiently and effectively, in accordance with government strategic policy and industry and consumer expectations.

6.21 We are also establishing a Delivery Monitoring and Oversight (DMO) function to support delivery of the strategy and meet our obligations under the new Air Navigation Directions from the Secretary of State. The new oversight team is being established will work directly with CAA colleagues and industry groups that are directly undertaking work necessary to deliver the 15 initiatives contained within the AMS. It will oversee and track delivery plans, reporting regularly to the co-sponsors and annually to the Secretary of State, fulfilling the CAA's annual reporting requirement as set out in the Air Navigation Directions. It will also have a key role to play in problem solving modernisation delivery and advising on the potential use of powers (should these be brought forward) to direct sponsors to prepare and submit airspace changes that are required as part of the CAA's strategy and plan.

### CAA Pension Scheme

6.22 In RP2 we recovered an amount of £6 million per year in respect of contributions to our defined benefit pension scheme to meet the Pensions Benefit Obligation (PBO) of NATS' pensioners and deferred pensioners prior to 2001, when NATS was separated from the CAA. IAG and IATA questioned the basis for this £6 million.

6.23 The CAA section of the CAA Pension Scheme (CAAPS) carried a provision to meet future increases in longevity for the NATS' pensioners described above. However, increases in life expectancy have now depleted that provision. In addition, the assets backing the PBO are gilts, but market movements have not kept pace with liability changes. Overall this means that further funding is needed in order to meet the PBO of NATS pensioners and deferred pensioners. We will therefore continue to recover £6 million per annum throughout RP3 to meet the liabilities described above.

### AMS support fund

6.24 In addition to the above airspace costs, we proposed to include an AMS support fund of £10 million over RP3. The fund will be similar in purpose and function to the FAS Facilitation (Small Gaps) Fund for RP2,[60] albeit wider in scope, slightly larger in scale and attached to the CAA Determined Costs, rather than NERL's. The cost of the support fund will add c.£0.16 to UK unit costs in RP3. As with the RP2 Small Gaps Fund, unutilised funds will be returned to airspace users in future reference periods.

6.25 NERL supported the proposed AMS support fund, with appropriate governance so that the CAA was not conflicted in its role of the delivery body drawing on the money and also as the regulator monitoring progress against targets. IATA also expressed support for the AMS support fund concept, but requested clarification of eligibility criteria, governance and decision-making arrangements. The governance arrangements for the AMS support fund, and other RP3 support funds, are addressed in chapter 9.

6.26 IAG disagreed with the provision of the AMS and other support funds and considered there were other methods such as through RP4 charges. We consider that a support fund during the reference period is the preferable approach as it allows for a quicker reaction to addressing requirements that were uncertain at the time of setting the performance plan. In addition, NERL proposed a similar mechanism as part of its business plan consultation process and the CCWG Co-Chairs' Report indicates provisional user support for such an approach.

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60 CAP 1249

## CAA final conclusions

**6.27** We have explained in the section above the basis for CAA costs in RP3 – there have been no changes between our draft proposals and final decision. CAA Determined Costs are summarised in the table below.

**Table 6.3: CAA RP3 costs (including AMS support fund) nominal and 2017 prices (£m)**

| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| CAA airspace total costs (nominal) | 13.2 | 16.9 | 18.6 | 19.3 | 19.7 | 20.1 |
| CAA airspace total costs (2017 prices) | 12.7 | 15.9 | 17.1 | 17.4 | 17.4 | 17.4 |
| AMS support fund cost (nominal) | - | 2.1 | 2.2 | 2.2 | 2.3 | 2.3 |
| AMS support fund cost (2017 prices) | - | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Overall CAA Determined Costs (nominal) | 13.2 | 19.0 | 20.8 | 21.5 | 21.9 | 22.4 |
| Overall CAA Determined Costs (2017 prices) | 12.7 | 17.9 | 19.1 | 19.4 | 19.4 | 19.4 |

Source: CAA

# Summary of overall UK en route total and unit cost

6.28 The cost efficiency KPI of DUC is expressed in local currency and derived by dividing Determined Costs by forecast air traffic, expressed as total service units[61] to calculate unit costs.

6.29 The EU-wide targets for cost efficiency are a year-on-year change of the average Union-wide DUC of -1.9% for each year of RP3.[62]

6.30 The UK cost efficiency target (DUC) for RP3 is set out in Table 6.5 below. This is based on the UK Determined Costs, set out in Table 6.4 below. The annual average rates of reduction for real Determined Costs is 1.6% and for real DUC is 3.5% over RP3.

6.31 It is noted that the performance regulation requires DUCs to be expressed using TSUs, to recover the costs of both civil and military flights. As military and exempt flights are funded separately, NERL's DUCs are expressed relative to CSUs for civil flights only. Therefore, to express NERL's DUC in performance scheme terms, NERL's Determined Costs have been grossed up for military and exempt flight service units (the difference between CSUs and TSUs). The DUC calculated using TSUs is therefore the same as calculated using CSUs without

61 Service units are a product of the distance factor and the weight factor.

62 Commission Implementing Decision 2019/390

the gross-up factor. NERL provides further details in Appendix H of its RP3 business plan.

Table 6.4: Overall UK Determined Costs for RP3 (on a TSU basis) (2017 prices £m)

| | 2019 Base | 2020 | 2021 | 2022 | 2023 | 2024 | CAGR 2019 to 2024 |
|---|---|---|---|---|---|---|---|
| NERL | 626.3 | 637.4 | 609.7 | 610.3 | 569.8 | 561.3 | -2.2% |
| MET | 25.5 | 29.1 | 27.8 | 28.6 | 31.1 | 30.7 | 3.8% |
| NSA & DFT | 64.0 | 66.2 | 66.9 | 66.7 | 66.6 | 66.8 | 0.9% |
| UK | 715.7 | 732.7 | 704.4 | 705.5 | 667.6 | 658.8 | -1.6% |

Source: CAA calculations

6.32 This is consistent with the DUC in Table 6.5.

Table 6.5: UK DUC for RP3 (2017 prices £m)

| | 2019 Base | 2020 | 2021 | 2022 | 2023 | 2024 | CAGR 2019 to 2024 |
|---|---|---|---|---|---|---|---|
| NERL | 50.47 | 50.39 | 47.30 | 46.29 | 42.51 | 41.23 | -4.0% |
| MET | 2.05 | 2.30 | 2.16 | 2.17 | 2.32 | 2.26 | 1.9% |
| NSA & DFT | 5.15 | 5.24 | 5.19 | 5.06 | 4.97 | 4.91 | -1.0% |
| UK | 57.68 | 57.93 | 54.64 | 53.52 | 49.80 | 48.39 | -3.5% |

Source: CAA calculations

6.33 This is consistent with the DUC in Table 6.6.

**Table 6.6: Summary**

| | 2019 Base | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| DC nominal (£000) | 746,880 | 779,903 | 764,803 | 781,316 | 754,070 | 759,099 |
| Inflation index | 104.4 | 106.4 | 108.6 | 110.7 | 113.0 | 115.2 |
| DC real (£000) | 715,704 | 732,695 | 704,421 | 705,520 | 667,565 | 658,841 |
| Total Service Units (000) | 12,408 | 12,648 | 12,891 | 13,183 | 13,406 | 13,615 |
| DUC real (£) | 57.68 | 57.93 | 54.64 | 53.52 | 49.80 | 48.39 |

Source: CAA calculations

Chapter 7

# Financeability

Our final decisions:

- include an assessment of NERL's overall financeability that indicates it will continue to be able to access investment grade debt finance to support its capital expenditure programmes
- retain an approach to financing capital expenditure using a regulatory asset base (RAB) consistent with previous reviews. These arrangements are well understood by investors and have a track record of allowing for the successful financing of large expenditure programmes
- reduce the real pre-tax cost of capital from the 5.86% used in RP2 to 2.91% for RP3 (in RPI-deflated terms) so sharing with NERL's customers and the users of its services the advantages of regulatory stability and lower financing costs.

## Introduction

7.1 It is important that NERL retains access to financial markets in order that it can fund necessary investment and deliver an appropriate level of service to the users of its services. We also have a statutory duty under the Transport Act to ensure that NERL will not find it unduly difficult to finance its licensed activities, and NERL's licence includes a requirement for it to use all reasonable endeavours to ensure that it maintains an investment grade issuer credit rating.

7.2 In setting NERL's price control we do not allow for the full costs of capital expenditure in the year that it is incurred. Instead, we add capital expenditure to NERL's RAB and make annual allowances for regulatory depreciation and its cost of capital, so that assets are financed over their economic life and users pay a reasonable charge for the services they receive from NERL. The allowances for these returns, the size of NERL's capital programme and the risks it is expected to manage determine the overall financeability of its activities – as providers of both equity and debt finance will seek rewards that are proportionate to the risks that they face. The allowances we make for NERL's regulatory depreciation and cost of capital are also important components of its Determined Costs in our final decisions.

7.3 This chapter sets out our final decisions on:

- NERL's RAB;
- regulatory depreciation;

- the inflation forecast (used in our financial modelling and calculations of NERL's RAB and regulatory depreciation);
- NERL's cost of capital (which is applied to NERL's RAB to calculate the allowance for returns in the assessment of Determined Costs); and
- the overall financeability of NERL in RP3.

7.4 We have assessed that our final decisions on these elements are consistent with NERL maintaining an investment grade issuer credit rating and therefore our statutory duty on financeability.

## Regulatory asset base

7.5 The RAB is a measure of the amount invested by NERL to provide services to users that is yet to be recovered from users through allowances for regulatory depreciation. For RP3, the RAB includes:

- additions for capital expenditure and reductions for allowed regulatory depreciation (i.e. on fixed assets);
- movements in working capital; and
- pensions pass-through asset, including capitalised finance costs.

### CAA draft proposals and stakeholder feedback

7.6 In its RP3 business plan NERL proposed to continue to index the RAB by the retail prices index (RPI).

7.7 Our draft proposals retained RPI indexation of NERL's RAB, consistent with our approach to regulation of Heathrow Airport Limited (HAL).

7.8 In its response to our draft proposals, IATA broadly supported the proposed approach to RAB and noted the approach to inflation. NERL supported the CAA's approach to indexation of the RAB.

7.9 IAG was concerned about our description of the RAB and requested we clarify that NERL's RAB reflects only unamortised capital expenditure.

### CAA final conclusions

7.10 Our final decision is to retain RPI indexation of the RAB for RP3, although consistent with our approach to regulation of HAL we intend to move to CPI (or CPIH) indexation in the future and will consider whether such an approach is appropriate for RP4.

7.11 As set out in the table below our projections of NERL's RAB for RP3 are lower than NERL's business plan forecasts and the CAA's draft proposals. The reduction to draft proposals primarily reflects the efficiencies to capital

expenditure discussed in chapter 5, as well as lower forecasts of the RPI (which also reduces the RAB forecast slightly in 2018-2019). The further reduction in our final decision is mainly due to lower outturn RPI in 2018 than forecast in our draft proposals and reductions to forecast RPI inflation during RP3 to reflect more recent market forecasts. We note that there are true-up arrangements in place, so the final level of the RAB will depend on actual levels of capital expenditure (subject to efficiency tests)[63] and the RPI, among other factors.

**Table 7.1: CAA's final decision for en route average RAB (£m, year-end outturn prices)**

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|
| NERL Business Plan | 1,003 | 982 | 1,008 | 1,086 | 1,209 | 1,298 | 1,316 | 1,320 |
| CAA – draft proposals | 1,003 | 979 | 998 | 1,067 | 1,188 | 1,274 | 1,279 | 1,273 |
| Difference between draft proposals and Business Plan | 0 | -3 | -9 | -19 | -21 | -24 | -36 | -47 |
| CAA – final decision | 1,003 | 975 | 987 | 1,053 | 1,173 | 1,257 | 1,264 | 1,258 |
| Difference between final decision and Business Plan | 0 | -6 | -21 | -32 | -36 | -41 | -52 | -62 |

Source: CAA analysis of NERL's RP3 business plan

7.12 In our draft proposals we said we would work with NERL to check and, where necessary, improve the documentation around the RAB calculations ahead of our final decisions. We have updated the RAB rules that set out how the RAB should be calculated during RP3. This update to the existing RAB rules for RP2 includes the following notable changes:

- as the RAB is inflated by RPI and revenues are inflated by CPI each year, differences between the actual wedge between RPI and CPI inflation measures and the forecast wedge in our final decision would lead to differences in depreciation and allowed returns recovered through revenues. We propose to true up for these differences in the RAB in the updated RP3 rules, to be recovered through revenue in RP4 and beyond;
- we have adjusted the opening UKATS RAB in 2020 to correct for two errors we identified in previous RAB calculations, reducing the opening RAB by around £3.6 million in outturn prices.[64] These adjustments have been discussed with NERL; and

[63] Further details are provided in chapter 5

[64] We identified two errors from our review: (i) a double-count of regulatory depreciation and regulatory return in capitalised financing costs for pension pass-through, which overstated the opening RAB; and (ii) an indexation error in the opening RAB in 2014, which understated the opening RAB

- we have included new sections in the RAB rules for calculation of the RAB for London Approach, for reporting purposes, and operation of the ex-post efficiency incentives, information incentive (where capex overspend during RP3 is only remunerated at its cost of new debt financing where there has been a serious failure in the provision of information to justify the overspend) and delivery incentive (a financial incentive to NERL's delivery of its capex programme up to a penalty cap of £36 million) set out in our final decision.

7.13 We have published the draft final RAB rules alongside our final decision in a separate working paper. We will finalise these before the start of RP3. These rules should provide for greater transparency in NERL's RAB and at least go some way to addressing IAG's concerns about the calculation of NERL's RAB.

7.14 We engaged Grant Thornton to provide an independent review of the NERL financial model used for these final conclusions, including calculation of the RAB to make sure it is consistent with these updated RP3 RAB rules.[65] Grant Thornton did not identify any material issues that remain outstanding with the calculation of the RAB in its review.

## Regulatory depreciation

7.15 Regulatory depreciation allowances in the calculations supporting NERL's price control (and its Determined Costs) relate to capital expenditure in RP3 and previous reference periods. They also include adjustments that true-up for differences in the level of actual capital expenditure and the level assumed in setting previous price controls.

### CAA draft proposals and stakeholder feedback

7.16 In its RP3 business plan NERL proposed a regulatory depreciation profile reflecting:

- straight-line depreciation for the opening RAB at privatisation, based on a 20-year asset life. The opening RAB is expected to be fully depreciated by 2022;
- straight-line depreciation for additions resulting from capital expenditure (since 2011 these additions have been depreciated based on an average 15-year asset life);

[65] Grant Thornton, NATS Financial Model 2018 – Findings from agreed testing procedures, updated for CAA final decision on price controls for Reference Period 3, August 2019

- adjustments which reflect true-ups for differences between actual and allowed capital expenditure in previous reference periods. These adjustments increase regulatory depreciation in RP3, reflecting the acceleration of DSESAR programme and higher levels of spending by NERL.

7.17 As noted above, in our draft proposals we applied efficiencies to capital expenditure and included a lower RPI forecast than in NERL's RP3 business plan and these have fed through into our projections of regulatory depreciation as set out in the table below.

7.18 NERL considered that our approach to calculation of regulatory depreciation is appropriate, but that depreciation was understated due to our understating the RPI-CPI 'wedge' (the difference between RPI and CPI inflation in a given year).

7.19 IAG noted they were unclear on whether depreciation is trued down for underspend as well as trued up for overspend.

## CAA final conclusions

7.20 We have reviewed a range of recent published sources on RPI and CPI forecasts in developing our draft proposals and final decisions, and disagree with NERL's comment that depreciation is understated because of our approach to forecasting the RPI and CPI wedge. We discuss our inflation forecasts in further detail in the section below. We also note that the updated RAB rules for RP3 include a mechanism to true up depreciation for differences between the actual and forecast RPI-CPI wedge, so NERL will be held neutral to any unexpected changes in the actual RPI-CPI wedge.

7.21 We can also confirm that the impact of efficient capital expenditure over or underspends are treated symmetrically within the RP2 and RP3 RAB rules.

7.22 Our final decision includes an outturn for RPI in 2018 and RPI inflation forecast for RP3 that is lower than our draft proposals, which has fed through into our projections of regulatory depreciation as set out in the table below.

**Table 7.2: CAA's final decision for en route depreciation (£m, 2017 CPI prices)**

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | RP3 |
|---|---|---|---|---|---|---|---|---|---|
| NERL Business Plan | 186 | 173 | 165 | 187 | 154 | 137 | 141 | 152 | 771 |
| CAA – draft proposals | 186 | 173 | 165 | 185 | 152 | 133 | 137 | 146 | 753 |
| Difference between draft proposals and Business Plan | 0 | 0 | 0 | -2 | -2 | -3 | -4 | -6 | -18 |
| CAA – final decision | 186 | 173 | 165 | 184 | 150 | 132 | 136 | 145 | 747 |

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | RP3 |
|---|---|---|---|---|---|---|---|---|---|
| Difference between final decision and Business Plan | 0 | 0 | 0 | -3 | -4 | -4 | -6 | -7 | -24 |

Source: CAA analysis of NERL's RP3 business plan. Note: As set out in NERL's business plan Appendix H (page 50), depreciation in RP2 reflects the allowances/assumptions made by the CAA.

7.23 We engaged Grant Thornton to provide an independent review of the NERL financial model used for these final proposals, including calculation of regulatory depreciation.[66] Grant Thornton did not identify any issues with the calculation of regulatory depreciation in its review.

# Inflation

7.24 Forecasts for inflation in the retail price index (RPI) and consumer price index (CPI) support the calibration and setting of NERL's price control, including indexation of the RAB and inflation adjustments in the price controls.

## CAA draft proposals and stakeholder feedback

7.25 In its RP3 business plan, NERL proposed RPI and CPI inflation forecasts from Oxford Economics (June 2018). In our draft proposals we reviewed these against more recent forecasts published by the International Monetary Fund (IMF), HM Treasury, Bank of England and Office for Budget Responsibility (OBR) and made changes to both the CPI and RPI forecasts.

7.26 NERL considered that we had understated the RPI-CPI wedge (the difference between RPI and CPI inflation in a given year), and considered that we should adopt an RPI-CPI wedge of 1.3% p.a. over RP3, as the mid-point between forecasts from OBR and Oxford Economics.

## CAA final conclusions

7.27 To inform these final decisions we have made forecasts of RPI and CPI inflation for RP3, based on reviews of recent forecasts published by the International Monetary Fund (IMF), HM Treasury, Bank of England, Office for Budget Responsibility (OBR) and Oxford Economics.[67] We have also used actual inflation to April 2019.

7.28 Based on our review of these forecasts, we have made the following updates to our draft proposals:

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66 Grant Thornton, NATS Financial Model 2018 – Findings from agreed testing procedures, updated for CAA final decision on price controls for Reference Period 3, August 2019

67 IMF, World Economic Outlook Database, April 2019; HM Treasury, Forecasts for the UK economy, May 2019; Bank of England, Inflation Report, May 2019; OBR, Economic and fiscal outlook, March 2019; Oxford Economics forecasts provided by NERL (April 2019).

- for CPI, we have used the IMF forecasts from the World Economic Outlook (April 2019), consistent with the SES regulations. We have checked that these are similar to HM Treasury's average of independent forecasts (May 2019) and OBR forecasts (March 2019); and
- for RPI, we have used HM Treasury's average of independent forecasts (May 2019) to 2023, then set RPI inflation as 1% above CPI (in line with the long-term RPI-CPI wedge estimated by the OBR). In our review, we checked that the forecasts for CPI, RPI and RPI-CPI wedge are broadly consistent between the different sources we used.

7.29 These forecasts for RPI and CPI suggest an average RPI-CPI wedge over RP3 of 1.0% p.a. We have checked this is in line with the average RPI-CPI wedge forecast by HM Treasury's average of independent forecasts (1.0% from 2020 to 2023) and OBR (1.0% from 2020 to 2023). These forecasts are markedly below the average RPI-CPI wedge forecast by Oxford Economics (1.4% from 2020 to 2024), which NERL has put most weight upon.

7.30 As noted above in the description of RAB rules for RP3, we propose to true up for these differences between the actual and forecast RPI-CPI wedge in the updated RP3 RAB rules, to be recovered through revenue in RP4 and beyond.

7.31 In our final decision, our forecast for CPI is higher and our forecast for RPI is lower than NERL's business plan and is slightly lower than our draft proposals based on more recent forecasts, as shown in table 7.3 below.

**Table 7.3: CAA final decision for inflation (%)**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|
| NERL Business Plan – CPI | 2.44% | 1.76% | 1.57% | 1.71% | 1.77% | 1.93% | 1.96% |
| CAA – draft proposals – CPI | 2.51% | 2.17% | 2.00% | 2.00% | 2.00% | 2.00% | 2.00% |
| CAA – final decision – CPI | 2.48% | 1.84% | 2.00% | 2.00% | 2.00% | 2.00% | 2.00% |
| NERL Business Plan – RPI | 3.46% | 3.00% | 2.88% | 3.03% | 3.47% | 3.59% | 3.54% |
| CAA – draft proposals – RPI | 3.40% | 3.20% | 3.10% | 3.30% | 3.30% | 3.00% | 3.00% |
| CAA – final decision – RPI | 3.34% | 2.61% | 2.70% | 3.00% | 3.10% | 3.00% | 3.00% |

Source: CAA analysis of NERL's RP3 business plan

## Cost of capital

7.32 Regulatory allowances for returns are calculated by applying an allowed cost of capital to our projections of NERL's average RAB. The allowed cost of capital at RP2 was based on a real (in RPI terms) pre-tax WACC of 5.86%. This provided

for a weighted average return to debt and equity finance and an allowance for corporation tax.

## CAA draft proposals and stakeholder feedback

7.33 Our business plan guidance set out that NERL should assume a cost of capital "*no more than the efficient level necessary to compensate NERL for the business and regulatory risks it faces*."[68] In its RP3 business plan, NERL calculated an allowed regulatory return of £277 million over RP3. This was based on a real (in RPI terms) pre-tax WACC of 5.07%. Although lower than at RP2, this comprised a higher 'vanilla' WACC than that used at RP2 of 4.51% and a lower corporation tax uplift of 12.7%. This was supported by analysis provided by NERA.

7.34 In coming to our draft proposals we reviewed a wide range of evidence to estimate an appropriate cost of capital for RP3, including recent market information and trends, regulatory precedent and reports from consultant advisors. In summary, we found there to be strong evidence pointing to a sharp reduction in the pre-tax WACC since RP2, which had not been properly reflected in NERL's RP3 business plan. We estimated a real (in RPI terms) pre-tax WACC for NERL of 2.84%, which is significantly below the 5.07% pre-tax WACC proposed by NERL in its RP3 business plan and the 5.86% pre-tax WACC used at RP2.

7.35 In its response to our draft proposals, NERL said that we had significantly understated the appropriate cost of capital. NERL proposed an updated vanilla WACC (RPI-deflated) of 4.21%, 30bps below the 4.51% in NERL's RP3 business plan. This was supported by an updated report from NERA on cost of equity and a report from Professor Zalewska on debt beta.[69] NERL's approach reflected adjustments to:

- total market return (TMR) – NERL proposed a TMR of 6.25%, below the 6.8% proposed in its RP3 business plan. This reflected updated evidence from NERA on historical and forward-looking estimates leading to a revised range of 6.2-6.8%, and is consistent with the top end of both the CAA range and recent Competition Markets Authority precedent;

68 CAP 1625 - Guidance for NERL in preparing its business plan for Reference Period 3 (January 2018) p.46

69 NERA, Cost of equity for RP3, April 2019; Professor Zalewska, Estimation of the debt beta of the bond issued by Nats (En-Route) plc, April 2019

- asset beta – NERL proposed an asset beta of 0.57, towards the top end of the updated NERA range of 0.53-0.58 (prior to our draft proposals, NERA had proposed a range of 0.56-0.66), to reflect NERL's greater exposure to traffic risk compared to ENAV (the Italian air navigation service provider which we have used as a benchmark for assessing NERL's asset beta) and other factors. NERL and NERA consider that we had significantly understated the asset beta in our draft proposals (0.46);
- debt beta – NERL proposed a debt beta of 0.05, in the middle of proposals by other UK regulators (0.1) and debt beta estimates from empirical and academic analysis (zero). NERL and NERA considered that we had overstated the debt beta in our draft proposals (0.13) and had placed too much weight on limited evidence from our advisors;
- equity beta – building on its approach to asset and debt betas, NERL proposed an equity beta of 1.35, below the 1.45 in its RP3 business plan but significantly higher than 0.96 used in our draft proposals;[70]
- cost of debt – NERL noted our draft proposals for the cost of debt (0.86%) and highlighted three particular issues with our assessment: (i) we should use a 15 year tenor for new debt, not a 10 year tenor; (ii) we had understated transaction costs; and (iii) we should use NERL's inflation forecasts. NERL proposed a cost of debt of 1.07%, very slightly below the 1.08% in its RP3 business plan.

7.36 NERL said that our assumptions for risk-free rate and gearing were reasonable but we had understated the RPI-CPI 'wedge', as noted above. NERL also said that the WACC should be increased to compensate for the risk of expected 3Di and capacity penalties that were part of our draft proposals.

7.37 HAL raised similar points to NERL on total market return, asset and debt betas in its response, considering we had significantly underestimated these parameters. In particular, HAL considered the evidence supports a TMR range of 6.2-6.8% in RPI-deflated terms, that Europe Economics had over-estimated the debt beta and underestimated the asset beta for airport comparators for NERL, and that the CAA has relied on limited and flawed analysis. HAL's response was supported by two reports from NERA on HAL's cost of equity and cost of debt.[71]

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70 An equity beta above one indicates that a company a faces higher systematic risk than the market as a whole, while an equity beta below 1 indicates that the company faces lower systematic risks than the market as a whole

71 NERA, Cost of equity for HAL at H7, April 2019; NERA, Cost of debt for HAL in H7, April 2019

7.38 IAG was broadly supportive of our WACC estimate, which is within the range of the CEPA's report for IAG.[72] IAG has provided an updated report from CEPA which broadly supports our conclusions on market-wide parameters but suggests our draft proposals had overstated NERL's efficient cost of debt. CEPA considered that we should put weight on NERL's actual cost of debt with appropriate adjustments to a 15-year term and projected changes in the cost of debt to mid-RP3, with evidence from cost of debt indices (which lead to higher estimates of the notional cost of debt) as a cross-check only. CEPA also said that iBoxx A-rated non-financials index has been a closer comparator to NERL's cost of debt in recent years.

7.39 IATA considered our WACC estimate to be at the top end of the justifiable range and should be reviewed downwards for factors such as recent market trends, regulatory precedent, further evidence on risks and reductions in the cost of debt and tax. Virgin Atlantic supported IATA's position. Ryanair considered that we had taken a more realistic view of the WACC than NERL.

7.40 PCS expressed concern about the large differences in our and NERL's views on WACC given the impact on financeability, suggesting that the CAA and NERL should seek better understanding and alignment. Prospect considered we should increase returns to reflect NERL-specific risks and because low regulatory returns (with pressures on costs, revised incentives and choice of traffic forecast) could lead to shareholders focusing on protecting returns to the detriment of service.

## CAA final conclusions

7.41 In coming to our final decision we have reviewed a wide range of evidence to estimate an appropriate cost of capital for RP3, including:

- the report we commissioned from Europe Economics on NERL's cost of equity betas and cost of new debt for our draft proposals and an updated report we commissioned to consider and respond to new evidence and issues raised by stakeholders and recent market information;[73]
- recent market information and trends;
- recent UK regulatory precedent;[74]

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72 CEPA, Cost of capital for NATS (En-Route) plc, November 2018; CEPA, Response to CAA consultations on RP3 and H7 WACC, April 2019

73 Europe Economics, Components of the Cost of Capital for NERL (December 2018); Europe Economics, Comments on NERA/NERL critiques of Europe Economics' WACC analysis, June 2019

74 This includes including WACC ranges in Ofwat's PR19 draft determinations, Ofcom's business connectivity statement, Ofgem's RIIO-2 methodology decision, and the UKRN cost of equity report

- reports we commissioned from PwC to provide very early of initial range WACC estimates to help guide the initial preparation for the next HAL price control (H7) in December 2017,[75] an update to this report that was published in February 2019[76] and a further update to consider and respond to sector-wide issues raised by stakeholders and published alongside these final proposals;[77]
- a report from CEPA commissioned by the International Airlines Group (IAG)[78] for our draft proposals and an updated CEPA note with IAG's consultation response;[79] and
- information and supporting evidence provided by NERL, including reports from NERA and Professor Zalewska,[80] and other stakeholder submissions, including the information and reports provided by HAL.

7.42 We continue to consider there is strong evidence pointing to a sharp reduction in the pre-tax WACC since RP2, which has not been properly reflected in NERL's RP3 business plan or NERL's response to our draft proposals. We estimate a real (in RPI terms) pre-tax WACC for NERL of 2.91%, which is significantly below the 5.07% pre-tax WACC proposed by NERL in its RP3 business plan and the 5.86% pre-tax WACC used at RP2.

7.43 Our point estimate for the post-tax cost of equity in our final decision (5.40%) is higher than the post-tax cost of equity in recent publications from Ofwat for PR19 (3.46%), Ofgem for RIIO-2 (3.22%) and Ofcom for Openreach (4.71%). We would expect NERL to have a higher cost of equity as NERL faces more demand risk than regulated water and energy companies.

7.44 The reduction in WACC since RP2 is due to:

- recent market trends and regulatory precedent that point to sharp reductions in expected equity returns and the risk-free rate since RP2;

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75 CAP 1611 - PwC, Estimating the cost of capital for H7 (December 2017)

76 PwC, Estimating the cost of capital for H7 – Response to stakeholder views, January 2019

77 PwC, Estimating the cost of capital for H7 and RP3 – Response to stakeholder views on total market return and debt beta, August 2019

78 CEPA, Cost of capital for NATS (En-Route) plc, November 2018

79 CEPA, Response to CAA consultations on RP3 and H7 WACC, April 2019

80 NERA, Weighted Average Cost of Capital for NATS (En-Route) plc at RP3 (March 2018, and updated September 2018); NERA, NERL's Asset Beta for RP3 (March 2018); and NATS, NERL response to CEPA's 'Cost of capital for NATS (En-Route) plc' report for the International Airlines Group (December 2018); NERA, Cost of equity for RP3, April 2019; and Professor Zalewska, Estimation of the debt beta of the bond issued by Nats (En-Route) plc, April 2019]

- further evidence on risks that NERL faces relative to the market that point to reductions in the required cost of equity. We consider that an equity beta at or below one to be appropriate, as the regulatory framework has a number of protections in place to reduce systematic risk compared with the market as a whole;
- reductions in the cost of new investment-grade debt and the relatively high proportion of new debt that NERL expects to raise during RP3; and
- reductions in the estimated effective tax rates for NERL.

7.45 Our final decision of a pre-tax WACC of 2.91% is slightly higher than our draft proposals. This is because of an increase in the debt and equity beta reflecting new information, partially offset by a lower estimated tax uplift.

7.46 Appendix E provides more details on our approach to estimating the WACC and our responses to the issues raised by stakeholders. Table 7.4 below summarises the impact on NERL's allowances for regulatory return, calculated by applying the allowed pre-tax WACC of 2.91% (in RPI terms) to the average RAB. These allowances have reduced from £277 million in NERL's RP3 business plan to £152 million in our final performance plan.

**Table 7.4: CAA's draft proposal for NERL's regulatory return (£m, 2017 CPI prices)**

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | RP3 |
|---|---|---|---|---|---|---|---|---|---|
| NERL Business Plan (RP3 WACC 5.07%) | 59 | 56 | 57 | 49 | 55 | 58 | 58 | 57 | 277 |
| CAA – draft proposals (RP3 WACC 2.84%) | 59 | 56 | 56 | 27 | 30 | 31 | 31 | 30 | 149 |
| Difference between draft proposals and Business Plan | 0 | 0 | -1 | -23 | -25 | -27 | -27 | -27 | -128 |
| CAA – final decision (RP3 WACC 2.91%) | 59 | 56 | 56 | 27 | 30 | 32 | 32 | 31 | 152 |
| Difference between final decision and Business Plan | 0 | 0 | -1 | -22 | -24 | -26 | -26 | -26 | -125 |

Source: CAA analysis of NERL's RP3 business plan. Note: Small change in 2019 due to the difference in RAB from a change in inflation forecasts.

## Financeability

7.47 It is important that NERL retains access to financial markets so that it is able to fund its capital programme. NERL finances its RAB through a mixture of debt and equity finance. Our business plan guidance asked NERL to provide evidence its business plan would be financeable and said that it should explain

any steps it would need to take with respect to these matters, consistent with both ensuring cost effective financing and providing affordable and value for money services to users.

7.48 In terms of debt finance, NERL and its existing bonds are rated by both Moody's and Standard & Poor's (S&P) at a relatively strong investment grade (NERL: A2 from Moody's and A+ from S&P). This means that NERL is rated as relatively low-risk and this allows it access to relatively low-cost finance. NERL has targeted a rating broadly consistent with these levels in its RP3 business plan.

7.49 NERL has assessed the financeability of its RP3 business plan by assessing the impact of its business plan on two core credit metrics from Moody's and S&P, in addition to supplementary metrics, NERL's own financing covenants and an assessment of the return on regulated equity (RORE). NERL's assessment is based on a Monte Carlo analysis, testing key risk factors such as traffic, operating costs, non-regulatory income, incentive scheme performance, inflation and LIBOR. NERL concludes that on the basis of its RP3 business plan it should be able to retain a strong investment grade credit rating and cost-effective access to new finance.

## CAA's approach to assessing financeability

### CAA draft proposals

7.50 For our draft proposals we assessed financeability using similar credit metrics to NERL but adopted a more focused approach to stress testing (discussed further below).

7.51 It is important that NERL is financeable not only on the basis of the assumptions used to set its price control, but also in the circumstances of an appropriate range of plausible downside scenarios. We explored these by designing and selecting appropriate stress tests. In our draft proposals we identified two key business risk drivers – air traffic volumes and operating costs (excluding pension costs as these are subject to certain cost pass-through arrangements). These reflect that air traffic is a key revenue driver for NERL and that operating costs form a relatively high proportion of its Determined Costs. The regulatory framework provides greater protection against certain other risk factors, such as increases in the level of capital expenditure, inflation and pension costs.

7.52 NERL has an important role in being efficient and responding effectively to downside scenarios. Our stress tests were before any significant mitigating actions by NERL's management, which could involve strengthening its cash position by reducing dividends and/or taking other actions so that its long-term business prospects would remain strong.

7.53 In our financial modelling, we used a notional approach to gearing and dividends, consistent with our approach to estimating NERL's cost of capital. We also

assumed NERL's cost of new debt was consistent with the assumptions we made in setting its cost of capital.

7.54 The analysis supporting our draft proposals revealed that while our base assumptions reduce revenue and therefore headroom against key Moody's and S&P ratios and NERL's financing covenants compared with NERL's RP3 business plan, the main ratios were above the credit metric downgrade thresholds and covenant trigger levels. We also found that under the stress tests that there seemed to be a high likelihood that NERL would be able to retain a strong investment grade credit rating and that its underlying investment grade status should be secure.

7.55 On this basis, we consider that our draft proposals were financeable and consistent with NERL retaining access to cost effective investment grade debt finance to support its investment programme.

**Stakeholder feedback**

7.56 NERL commented that the CAA's draft proposals were unlikely to be consistent with NERL maintaining a solid investment grade credit rating due to:

- the allowed cost of capital being too low;
- negative expected returns to equity when returns are adjusted for expected service penalties, cost shortfalls, non-regulatory income reductions, NERL's lower traffic forecast and stranded costs from a delay in the capital expenditure programme; and
- delay in its capital expenditure programmes reducing its expected returns.

7.57 NERL's analysis is based on comparing the Determined Costs and service level targets and incentives in our draft proposals with NERL's RP3 business plan, rather than any comments on our approach to assessing financeability. NERL also assumed it would not be able to meet our efficiency and quality of service targets.

7.58 IAG was concerned that our stress testing for traffic and costs was too extreme and that we had not explained how we arrived at these stress tests.

**CAA final decision**

7.59 For our final decision, we have taken the same overall approach as our draft proposals to test the financeability of our final decision, including under stress tests. To calibrate the stress tests, we have considered additional cross-checks, including understanding the approaches used by rating agencies. We recognise that the assumptions underlying these stress tests are highly unlikely to arise, but they are based on the analysis of historical data and are not so extreme as to invalidate using these in stress testing.

7.60 In calibrating the air traffic stress test, we considered analysis provided by NERL, historical variations in air traffic and analysis by Moody's, including:

- the lower quartile from NERL's Monte Carlo traffic simulations, which indicated a 6% reduction in traffic relative to the baseline;
- historical analysis of traffic during the economic downturn (2009-2011) and recovery period (2011-2015), which indicated a 5-10% reduction relative to the baseline;
- STATFOR's low and base traffic forecasts for years 2020 to 2024, which indicated a 4.5% reduction relative to the baseline; and
- analysis from Moody's, where we understand they tested scenarios similar to our own scenarios, including where traffic is around 10% lower than forecast near the beginning of RP3.[81]

7.61 Bearing the above in mind, we have used the same approach as our draft proposals, using 5% and 10% reductions in outturn air traffic in the stress tests, applied to each year of the RP3 control.

7.62 For the operating costs stress test, we considered the following:

- the higher quartile of NERL's Monte Carlo costs simulations, which indicated a 2% and 4% increase for ATCOs staff costs and non-staff costs respectively;
- historical analysis of costs. In 2016, NERL overspent on operating costs by 3% relative to the baseline assumption for RP2, though we note NERL outperformed on traffic in this same year; and
- to a significant extent a businesses' operating costs are under the control of its management and NERL should be able to reduce or to some extent offset the impact of factors pushing up its operating costs, while continuing to deliver a high quality of service for users.

7.63 Bearing the above in mind, we have used the same approach as our draft proposals, using 2.5% higher outturn operating costs (excluding pensions) in a stress test, applied to each year of the RP3 control.

7.64 Given the efficiency challenge we have applied to capital expenditure in our final decision, we have expanded the stress tests to check the impact on financeability if the costs of delivering NERL's capital expenditure programme is in line with its RP3 business plan. As actual efficient capital expenditure is

[81] Moody's, Credit opinion: NATS (En Route) plc, 22 March 2019

reflected in the regulatory asset base (RAB), this stress test is focused on the impact on cash-flows from the higher than expected capital expenditure.

7.65 We have used these results to formulate the following scenarios for the purposes of stress testing in our final decision:

- 10% reduction in actual traffic in all years of RP3;
- 5% reduction in actual traffic and 2.5% increase in operating costs (excluding pensions) in all years of RP3; and
- capital expenditure costs in line with NERL's RP3 business plan.

7.66 In March 2019, following publication of our draft proposals, Moody's published a Credit Opinion where NERL's long-term rating was unchanged at A2, but the outlook was changed to Negative.[82] We understand this reflected potential pressure on the company's liquidity position around the beginning of RP3 due to the CAA's proposed reduction in allowed returns, repayments by NERL of revenues under the traffic-risk sharing mechanism for outperformance in RP2, potential downside traffic scenarios due to economic uncertainty such as from Brexit, a growing capital expenditure programme and challenging efficiency targets on operating expenditure. Moody's published forecasts for key credit metrics and indicators for 2019 and 2020. We noted that in some cases these metrics and indicators are substantially lower than our draft proposals assessment. We have investigated these matters further with NERL and Moody's.

7.67 We explored with NERL and Moody's the differences in the forecast credit metrics near the start of RP3. We also asked Grant Thornton to review these credit metrics as part of its independent review of the financial modelling and our stress tests. This review has not highlighted any concerns with the credit metrics calculations in NERL's financial model, so we continue to use these for our financeability assessment.

7.68 Our assessment of the final decisions and stress tests reveals:

- the quantitative financeability analysis is similar to our draft proposals and NERL's position is slightly strengthened, supported by changes in our final proposals such as an increase in allowed returns and lower efficiency targets for costs. We set out further details on the changes below;

[82] Moody's, Credit opinion: NATS (En Route) plc, 22 March 2019

- while our base assumptions reduce revenue and therefore headroom against key Moody's and S&P ratios and NERL's financing covenants compared with NERL's RP3 business plan, the two core ratios are above the credit metric downgrade thresholds and covenant trigger levels. The results from two key ratios mentioned in guidance from Moody's and S&P are shown in Figures 7.1 and 7.2 below. We do observe a downward trend in the adjusted interest cover ratio, but do not consider this should cause undue financeability concerns. We provide further detail on the quantitative financeability analysis in Appendix G;
- under the downside stress tests, in most years of RP3 NERL would not breach its banking covenant trigger levels and would remain above the credit metric downgrade thresholds for a strong investment grade credit rating. While a breach of a credit rating threshold or covenant would be of concern to rating agencies and providers of debt finance, our stress tests are before any significant mitigating actions by NERL's management. This could involve strengthening its cash position by reducing dividends and/or taking other actions in response to significantly lower traffic levels, so that its long-term business prospects would remain strong. Bearing this in mind, there seems to be a high likelihood that NERL would be able to retain a strong investment grade credit rating and its underlying investment grade status should be secure; and
- the RORE is in line with the cost of equity in our allowed WACC. The nature of the testing on RORE has been on the downside, as for the credit metrics. RORE would remain positive in most years of RP3 under the lower traffic stress test and slightly negative under the lower traffic and higher cost stress test. However, this is before considering mitigating actions by NERL's management and this does not consider the strong potential for NERL to achieve higher than expected equity returns from outperformance on traffic and costs. Bearing this in mind, there seems to be a high likelihood that NERL would remain financeable from an equity perspective.

7.69 Our conclusion is that our assumptions with respect to NERL's Determined Costs are consistent with NERL meeting its financing covenants and maintaining a solid investment grade credit rating given our financial modelling and projections of the two core credit metrics – net debt to RAB (which is particularly important to Moody's) and FFO to Net Debt (which is particularly important to S&P). We recognise that both Moody's and S&P also consider wider trends, adjustments, other credit metrics and other qualitative factors in reaching judgements on overall credit rating assessment and we have also considered these wider regulatory and business risks that NERL faces. We provide further details on our assessment in Appendix G.

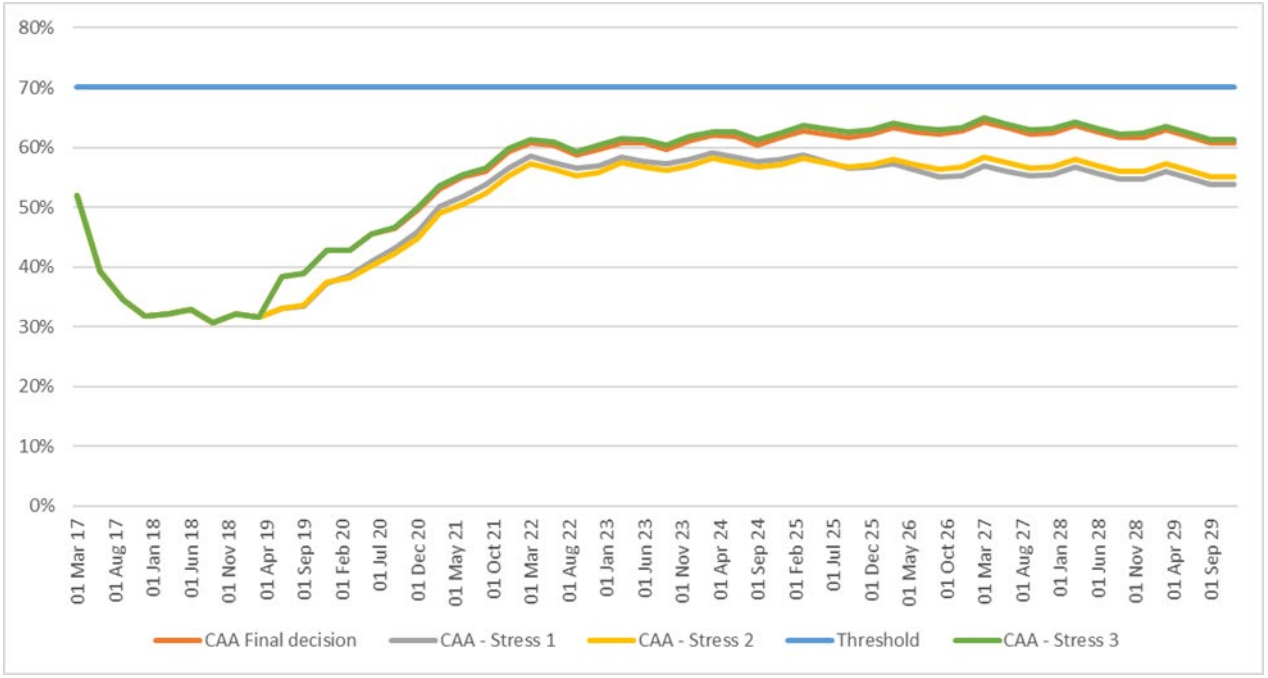
7.70 We have also made a number of changes between our draft proposals and final decision that further support NERL's financeability position, particularly in the early parts of RP3 where Moody's has raised some concerns under a scenario where there is a severe economic downturn. In particular, we have:

- reduced the efficiency challenges to NERL's allowed operating costs and in particular have allowed NERL's forecast cost increases in 2020 to 2022;
- increased the allowed cost of capital to reflect our judgements on new evidence provided by stakeholders;
- reduced the traffic forecast reflecting more recent forecasts from STATFOR, which further reduces downside risks;
- reduced the efficiency challenge to NERL's allowed pension costs and in particular allowed NERL's forecast defined benefit pension deficit cost in 2022;
- proposed a mechanism to correct the allowed depreciation and allowed return in the calculation of the En-route and Oceanic RABs for any unexpected changes in the wedge between RPI and CPI inflation; and
- reduced potential service penalties for capacity and environment service level targets, compared with our draft proposals and RP2.

7.71 On this basis, we consider that our final decision does not cause undue financeability concerns, even under stress test scenarios, and are consistent with NERL retaining access to cost effective investment grade debt finance to support its investment programme. We have targeted NERL's current credit rating in this analysis, though note that a one-notch reduction to A-/A3 would still be a solid investment grade credit rating and is consistent with the level that NERL targeted in its RP3 business plan.

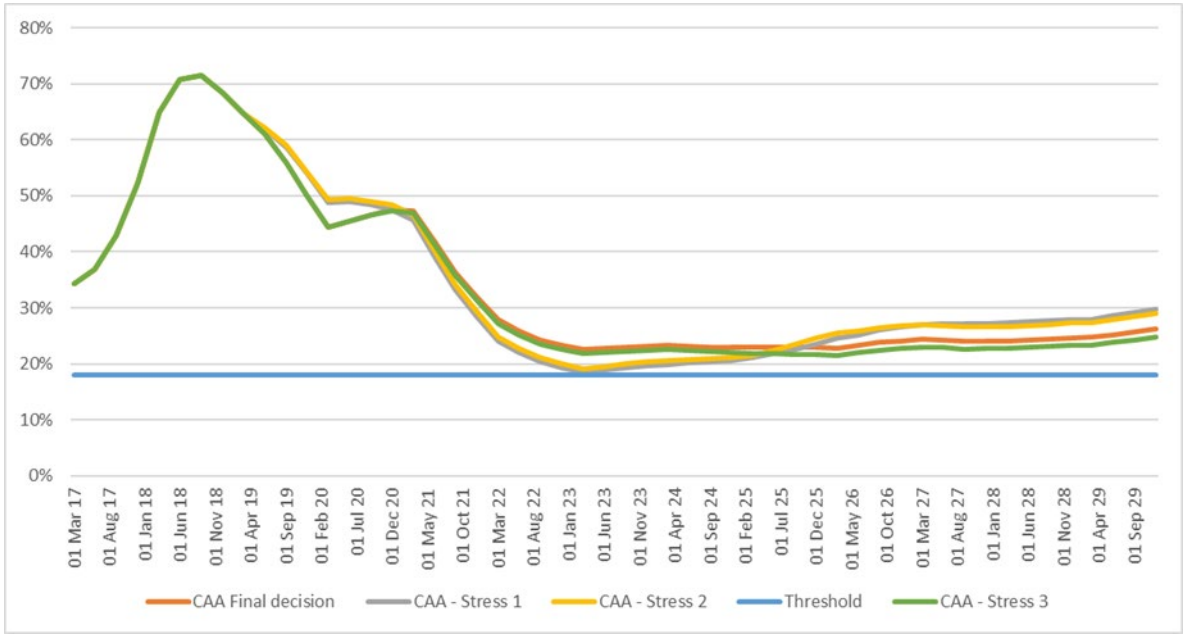
7.72 We do not consider it necessary to reprofile regulatory depreciation to deal with issues of financeability or affordability. Our approach to financeability testing is set out in more detail in Appendix G.

**Figure 7.1: Assessment of adjusted net debt to RAB**




Source: CAA analysis

**Figure 7.2: Assessment of FFO to adjusted net debt**




Source: CAA analysis

**Additional quality assurance**

7.73 We have used NERL's RP3 financial model as the basis of our conclusions and decisions and have engaged Grant Thornton to provide an independent review of the financial modelling and our stress tests.[83]

7.74 Grant Thornton raised various issues during its review that have been addressed by NERL or us and has not identified any outstanding issues that have a material impact on the financial estimates in these final decisions.

7.75 Grant Thornton's report identifies three unresolved items, which we discuss below:

- A balance sheet difference of around £0.01 million that arises form a change to inflation assumptions;
- CAA to confirm NERL's treatment of the excess funds from the RP2 FAS Facilitation Fund and the Innovation and Network Agency (INEA), which are returned to users in RP3; and
- A discrepancy of around £0.05 million in the calculation of the pension contribution variance.

7.76 The first and third items do not have a material impact on our final decision. We have raised these with NERL and recommend that it corrects these in the final RP3 version of the financial model. For the second item, we have resolved this in our final decision by reviewing NERL's proposed approach and updating for our view on the forecasts for excess funds to be returned in RP3. The mechanism for returning unspent INEA and FAS funds are included in the draft licence conditions in Appendix H.

[83] Grant Thornton, NATS Financial Model 2018 – Findings from agreed testing procedures, updated for CAA final decision on price controls for Reference Period 3, August 2019

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 (which are provided at each airport by an ANSP under contract with the airport operator) at certain London airports. The London Approach service was established to realise safety and capacity benefits of centrally managing the congested London terminal airspace.

8.2 This chapter:

- sets out the scope of the London Approach service in RP3;
- sets out our final decision on the approach to cost allocation that informs the setting of charges for the London Approach service; and
- sets out monitoring of NERL's performance in providing the London Approach service in RP3.

## Scope

8.3 The following airports were in scope of the London Approach service for RP2:

- Heathrow Airport;
- Gatwick Airport;
- Stansted Airport;
- Luton Airport; and
- London City Airport.

8.4 Along with these five airports, NERL's Swanwick centre also provides control services to aircraft flying in and out of other London area airports including Northolt, Elstree, Fairoaks and Redhill. Aircraft using these airports pick up en route charges where appropriate, rather than the London Approach charge, mainly where they are operated under instrument flight rules in controlled airspace.

8.5 The London Approach function also provides services to Battersea Heliport but these are not charged for as part of the London Approach service, as NERL considers the separation of helicopters from traffic from Heathrow and London City airports is an important safety measure.

## Addition of Biggin Hill Airport to the London Approach

8.6 Biggin Hill Airport requested to be added to scope of regulated charges for RP3.[84] Biggin Hill currently receives the service on commercial terms from NSL. The fees NERL then receives from NSL for serving Biggin Hill are deducted from the single till.

8.7 In our business plan guidance to NERL we set out our expectation that NERL should review the scope of the London Approach service in response to this request.[85]

8.8 In its business plan, NERL said that the Biggin Hill approach service is similar to that provided to other airports included in the scope of London Approach, using shared equipment and resources.[86] It noted that adding Biggin Hill to the London Approach service would have no material impact on its operation, including on safety, environment and capacity. However, NERL's response to our consultation then disagreed with its business plan, citing Biggin Hill's location outside controlled airspace and its operating environment with a significantly higher proportion of low weight aircraft including those that do not use NERL's services at all. While these features may differentiate Biggin Hill from other London Approach airports, NERL does, nonetheless, provide air traffic services to aircraft flying to Biggin Hill using London approach shared equipment and resources.

8.9 NERL also said that adding Biggin Hill to the scope of regulated charges would reduce the London Approach terminal charge by 3p and increase the en route charge by 1p per service unit (which corresponds to around [✂] per year of costs).

8.10 NERL stated that if Biggin Hill were to be added to the regulated charges, recovering the London Approach charge from the smaller aircraft that use Biggin Hill would represent a disproportionately large administrative burden compared to the size of the charges. NERL proposed to recover charges from Biggin Hill directly, rather than from individual aircraft that use the airport.

## CAA draft proposals

8.11 We proposed to include Biggin Hill in the scope of the regulated London Approach charge for RP3 but due to lack of sufficient data at the time of the proposals, the cost envelope for London Approach (or necessary changes to the en route element) did not include this addition. When making our draft proposals

84 See: Biggin Hill Airport Response to CAP 1511 (May 2017).

85 CAP 1625 - Guidance for NERL in preparing its business plan for Reference Period 3 (January 2018).

86 NERL RBP, Appendix O.

we had no evidence that including Biggin Hill in the scope of the London Approach service would distort competition.

## Stakeholder feedback

8.12 Airspace users did not oppose the inclusion of Biggin Hill in the scope of the London Approach service.

8.13 NERL supported Biggin Hill airport being included in the charging scheme for the London Approach service, on the following conditions:

- based on the existing scope of the services defined in the current contract between NSL and Biggin Hill Airport; and
- that NERL would be allowed to bill Biggin Hill airport directly to recover all of its charges.

8.14 NERL noted that its business plan did not contain the resources needed to expand the existing scope of services at Biggin Hill. It also noted that it would be practically difficult to do so as capacity is already constrained within the existing London Approach area and all NERL's training capacity is already directed at London Airspace modernisation. NERL considered that we had not taken sufficient account of the practical difficulties NERL would face in resourcing and providing a London Approach service beyond the existing scope. However, as NERL has not provided any further information as to the scale of this possible expanded resourcing requirement it is difficult to assess the impact for any service change at Biggin Hill airport.

8.15 Staff representatives raised some concern over NERL's business plan estimate of no administrative costs stemming from the inclusion of Biggin Hill in scope.

## CAA final conclusions

8.16 Our final decision is to partially include Biggin Hill in scope of the London Approach regulated charge for RP3.

8.17 Given NERL's (as well as staff) concerns over potential costs on increasing the scope of current services provided to Biggin Hill should it be fully added as an airport in scope of the regulated charge for RP3, the CAA considered an alternative approach put forward by NERL.

8.18 Under this approach, the scope of services shall be similar to those currently provided to Biggin Hill. Aircraft receiving those services using the same shared equipment and resources as other London Approach airports would face comparable charges to aircraft using other London Approach airports.

8.19 The anticipated revenue from this service was estimated at [✂] by NERL using a terminal service units estimate multiplied by the charges currently levied on the London Approach airports. The revenue NERL receives from these services will

be treated as 'other revenue' in the meaning of the performance regulation, and therefore netted off the London Approach regulated charge. Broadly speaking, this is similar to the approach used for North Sea Helicopter services as well as the contractual arrangements with the MOD in the en route charge, which are also treated as other revenue.

8.20 We have no objections to NERL collecting the charge in an effective and transparent way it can agree with airspace users and Biggin Hill Airport.

## Cost allocations of the London Approach service

8.21 The performance regulation does not set out clear criteria for determining whether services should be treated as terminal or en route for the purposes of charging. Across Europe there is a general lack of transparency around how costs are allocated for functions that manage complex approach airspaces such as London Approach.

8.22 London Approach's operational characteristics have elements of both terminal and en route functions. In RP2 London Approach was considered as a separate terminal charging zone (Charging Zone C). To reflect that London Approach has both terminal and en route elements, around a third of the cost of the service is allocated to Charging Zone C, with the remainder allocated to NERL's en route charge.

8.23 We have previously suggested there might be advantages in having a better separation of the terminal charge for the London Approach service.[87]

8.24 Alongside its business plan, NERL submitted to the CAA evidence on the allocation of approach functions between en route and terminal charges used by other 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 (>=20km) and terminal (<20km less the area estimated to be handed over to TANS). It found that the resulting allocation was consistent with the cost allocation used in RP2.

### CAA draft proposals and stakeholder feedback

8.25 We consider there would be a number of practical difficulties to overcome before arrangements for a separate full cost terminal charge for the London Approach service could be put in place:

[87] CAP 1098 - Regulatory treatment of London Approach charges in Reference Period 2 (2015-2019) of the Single European Sky Performance Scheme - A consultation document (October 2013)

- the London Approach service may benefit users overflying Southern England, who would not be charged if the service is only a terminal charge; and
- the current regulation does not provide for a separate charging zone that comprises both terminal and en route elements.

8.26 Bearing the above in mind we proposed to retain the current charging arrangements for London Approach in RP3 – a separate terminal charge with the current approach to the allocation of costs. However, we will continue to monitor European developments, and may review our approach in the future.

8.27 NERL noted that our proposed approach seemed a pragmatic way forward. Airlines also did not oppose the proposal to retain the RP2 charging arrangements for London Approach in RP3 with the same approach to the allocation of costs.

## CAA final conclusions

8.28 Our final decision is to retain the RP2 charging arrangements for London Approach in RP3.

8.29 Table 8.1 below presents final cost allocations to the London Approach services in RP3. We have updated the Determined Costs to reflect the impact of our changes to en route operating and capital costs as well as updated the forecast for terminal service units to the latest STATFOR's February 2019 publication, consistent with our approach to en route.

**Table 8.1: CAA final decision on cost allocations to the London Approach service**

| | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| DC nominal (£000) | 13,355 | 13,250 | 14,174 | 13,528 | 14,317 |
| Inflation index | 1.064 | 1.086 | 1.107 | 1.130 | 1.152 |
| DC real (£000) | 12,547 | 12,204 | 12,799 | 11,976 | 12,426 |
| STATFOR's Terminal service units (000) | 1,006 | 1,016 | 1,042 | 1,054 | 1,061 |
| Deal DUCs in 2017 prices (£) | 12.47 | 12.02 | 12.29 | 11.36 | 11.71 |

# Reporting on NERL's performance

8.30 Our RP3 business plan guidance set out expectations for NERL to consider the level of granularity of the information it provides on service quality performance for the London Approach service and identify appropriate metrics that reflect the performance of the London Approach service.

8.31 NERL's capacity and resilience to deliver the London Approach service came under scrutiny as part of Project Oberon,[88] which identified that a more granular view of NERL's performance across its activities would enable the earlier identification of potential performance issues (for example, information on NERL attributable delay in the London Approach area).

8.32 NERL's RP3 business plan identified three potential metrics for performance monitoring of the London Approach service:

- the availability of the service for London Approach airports;
- scheduled demand per hour compared to actual demand per hour; and
- traffic growth per airport compared with agreed forecast.

## CAA draft proposals and stakeholder feedback

8.33 We considered that only the first of these represents NERL's performance. The latter two proposed metrics relate to airports/users, rather than the way NERL is delivering the London Approach service. We proposed that NERL would need to engage with users by the start of RP3 to identify and implement more suitable performance monitoring metrics under the requirements of Condition 11 of its licence. Any such metrics would be additional to the reporting commitments that NERL has made as part of Project Oberon.[89]

8.34 NERL supported our draft proposal, noting that it is consistent with the outcomes from the CCWG and its own proposal in its RP3 business plan.

## CAA final conclusions

8.35 We expect NERL to engage with users by the start of RP3 to identify and implement suitable performance monitoring metrics for the London Approach service.

88 CAP 1578 - Investigation under section 34 of the Transport Act 2000: Project Oberon, Final Report (3 August 2017)

89 CAP 1578 - Investigation under section 34 of the Transport Act 2000: Project Oberon, Final Report (3 August 2017)

Chapter 9

# Uncertainty mechanisms

## Introduction

9.1 There are a number of mechanisms designed to mitigate and share the risks stemming from uncertainties that may arise over the reference period. A number of these derive from the performance regulation – including in relation to the traffic and cost risks faced by NERL.

9.2 Given the importance to users of airspace modernisation, it is particularly important that there are appropriate funding arrangements that facilitate its delivery. In addition to the mechanisms under the performance regulation, we have also developed measures to address the uncertainties around the costs of airspace modernisation in RP3.

9.3 The uncertainty mechanisms described in this chapter allow risks to be shared between NERL and its customers. This contributes to NERL being a relatively low risk business. We have taken account of this in our estimate of NERL's cost of capital,[90] and so its customers should directly benefit from this in terms of lower charges from NERL for the services it provides.

9.4 Notwithstanding these mechanisms, we expect NERL to manage uncertainty appropriately during RP3, responding efficiently to all the challenges it faces and mitigating risks in a way that is in the best interests of customers.

9.5 This chapter:

- sets out the measures prescribed by the performance regulation for addressing traffic risk and costs risk, and our final decision on the application of these in RP3;
- describes the additional funds established to facilitate airspace modernisation delivery; and
- sets out the available mechanisms to revise performance plan targets and to re-open NERL's price control.

[90] See Chapter 7

# Traffic risk

## SES requirements

9.6 The performance regulation sets out two related mechanisms to address traffic risk – risk sharing and alert thresholds.

**Risk sharing**

9.7 The performance regulation requires Member States to apply a traffic risk sharing mechanism to share the impacts of variations between actual and forecast traffic volumes between the ANSP and users.

9.8 Historical evidence suggests that traffic volumes are to some extent correlated with GDP growth and other macroeconomic indicators (for example, consumer spending). This means that there is a systematic component to traffic volume changes.

9.9 The traffic risk sharing mechanism limits NERL's exposure to this systematic risk. This in turn reduces its required cost of capital, which is beneficial to users as the lower cost of capital flows through to lower charges. The traffic risk sharing mechanism is also important in supporting NERL's financeability by mitigating the impact on revenue in the event of lower than expected traffic levels.

9.10 The performance regulation defines a default traffic risk sharing mechanism that retains the same features as in RP2:

- the ANSP bears all traffic risk when traffic varies within ±2% of the forecast used for RP3. This represents a deadband;
- the ANSP bears 30% (the 'risk sharing rate') of the incremental risk when traffic varies between ±2% and ±10% (the 'cap/collar') of the forecast, with users bearing the remaining 70% of this incremental risk; and
- users bear all incremental risk when traffic is more than ±10% of the forecast.

9.11 The default mechanism puts a maximum of ±4.4% of eligible revenue at risk. The performance regulation allows Member States to consult on changes to the deadband and risk sharing rate, provided they do not reduce the ANSP's maximum risk exposure below the level implied by the default mechanism.

### Alert thresholds

9.12 As part of the EU-wide target setting process, the Commission has established alert thresholds beyond which previously approved targets can potentially be amended during the reference period.[91] These thresholds will cover:

- deviation of actual traffic by at least 10% compared to the forecast in terms of IFR movements as well as service units; and
- the variation by at least 0.04 minutes of en route ATFM delay in the Network Manager's Air Traffic Flow Management delay reference values which underpin the capacity KPI.

## CAA draft proposals and stakeholder feedback

9.13 The CCWG Co-Chairs' Report indicated that there was not agreement between NERL and users on the potential impact of making changes to the traffic risk sharing arrangements, but users were clear that they would not support any increase in NERL's cost of capital.

9.14 In our draft proposals we proposed to retain the default traffic risk sharing mechanism as defined in the performance regulation. We consider it provides a strong incentive on NERL to mitigate the impact of lower traffic levels (for example, by reducing costs) and shares a large proportion of the upside of higher than expected traffic levels with users. Adopting a mechanism with a greater level of revenue at risk may not represent an efficient outcome for users, given the potential to increase NERL's required cost of capital.

9.15 If an alert threshold were reached, we proposed that we would assess whether NERL had taken appropriate mitigating measures and decide whether to propose a revision of targets. Mindful of the interdependencies between capacity, flight efficiency and costs, the triggering of alert mechanisms would enable us to consider proposing to amend both cost and service quality targets, as appropriate and justified.

9.16 Stakeholders generally agreed with our draft proposals on traffic risk sharing and alert thresholds. Prospect cautioned against a knee-jerk approach to traffic decreases, as there would be a high risk of under-resourcing should traffic levels increase again over the short/medium term.

[91] Commission Implementing Decision (EU) 2019/903 of 29 May 2019 setting the Union-wide performance targets for the air traffic management network for the third reference period starting on 1 January 2020 and ending on 31 December 2024

### CAA final conclusions

9.17 Our final decision is to retain the default traffic risk sharing mechanism and alert threshold process contained in the performance regulation.

9.18 We note Prospect's views on the risk of under-resourcing and will take this risk, along with other relevant factors, into account in assessing the situation if an alert threshold associated with lower traffic is reached.

## Costs risk

### Unforeseen costs

9.19 The performance regulation provides for risk sharing arrangements with respect to certain unforeseen costs, including:[92]

- unforeseen changes in costs of new and existing investments;
- unforeseen changes in costs of competent authorities, qualified entities and DfT (in respect of Eurocontrol);
- unforeseen and significant changes in pension costs resulting from unforeseeable changes in national pensions law, pensions accounting law or unforeseeable changes in financial market conditions;
- unforeseen and significant changes in costs resulting from unforeseeable changes in interest rates on loans; and
- unforeseen and significant changes in costs resulting from unforeseeable changes in national taxation law or other unforeseeable new cost items not covered in the performance plan but required by law.

9.20 We will seek to make use of these provisions in RP3, where it is in the interests of airspace users and NERL has demonstrated it has taken all reasonable measures to efficiently manage any cost increases during the period. This is consistent with our approach to RP2, where we have allowed for changes in pensions, radio spectrum and DfT costs.

9.21 We note that as NERL is subject to incentive regulation rather then a pass-through mechanism, it is also incentivised to control its core operating costs – which are the largest component of its cost base.

### Other uncertain costs

9.22 To support the delivery of national strategic objectives during RP3, our draft proposals set out provision for costs where detailed strategy, policy and operational requirements are not well developed or are unknown at the time the

[92] Article 28 of the performance regulation

performance plan is adopted. This section sets out the arrangements for those costs, covering a capital expenditure contingency allowance and two additional support funds.

## Capital expenditure contingency allowance

9.23 In our business plan guidance to NERL we said that it should adopt a two-track approach to developing their business plan:

- a “core” baseline plan incorporating known and expected requirements; and
- supplemental information setting out the incremental effects on costs; and performance of less certain “wider” requirements and possible future developments.

9.24 As our RP3 review process progressed and programme/activity costs became clearer and more certain we said these wider requirements could be incorporated into core costs. Where requirements remained uncertain and were likely to remain so into RP3, we said that NERL should propose appropriate mechanisms for dealing with such uncertainties and costs.

9.25 In its RP3 business plan NERL identified a range of activities it considered to be wider requirements, such as support to airspace modernisation and electronic conspicuity. At a high level, NERL described a potential mechanism to recover wider costs through additions to the unit rate, subject to consultation and a governance mechanism. The CCWG Co-Chairs’ Report indicates provisional user support for such an approach, provided there are suitable enhancements to NERL’s capital investment governance mechanism.

9.26 Where appropriate, and consistent with the performance scheme, we would support this approach. Our draft proposals made provision for a capital expenditure contingency allowance as proposed by NERL and agreed with airspace users through customer consultation. Use of the allowance would be subject to our proposed enhanced SIP governance requirements (discussed in chapter 5) and would be the first source of any additional capital expenditure funding required. Under our enhanced governance processes, we propose that the Independent Reviewer would have a role in assessing the cost efficiency of NERL’s capital expenditure, and there would be an escalation process if NERL and airspace users cannot reach agreement which would, where appropriate, include agreement from the co-sponsors of airspace modernisation.

## Support funds for uncertain costs

9.27 In addition to capex contingency measures, recognising the importance of airspace modernisation in RP3 our draft proposals set out two support funds financed from NERL’s and our own Determined Costs.

**Opex Flexibility Fund (OFF)**

9.28 NERL's RP3 business plan proposed an OFF of £35 million (2017 prices) over RP3. The OFF would be similar in nature to the existing RP2 FAS Facilitation (NERL) Fund,[93] but larger in scale than the £15 million RP2 fund and broader in scope.

9.29 NERL proposed that the OFF be used for additional operating costs:

- to deliver a project using a different mix of operating and capital expenditure from that in its business plan; and
- to address key risks or unforeseen circumstances to ensure that the core plan can be delivered on time.

9.30 Our draft proposals stated that the OFF should primarily be the main vehicle to support uncertain costs arising from the implementation of the AMS. We made an allowance for operating costs that we consider appropriate for NERL to meet its obligations and provide its core services, and it is for NERL to manage its business within the revenue we allowed.

9.31 We noted that we expected the eligibility criteria for the use of the OFF to be broader than is the case for the RP2 fund. As part of customer consultation, NERL and airspace users agreed that the governance and decision-making for the use of the fund could be based on the enhanced SIP governance procedures (set out in chapter 5), rather than the RP2 Investment Board process.

9.32 We agreed with this approach in principle, but recognised it was important to ensure proper linkages with, and where appropriate roles for, AMS governance. For example, we expected the OFF's use to be developed through agreement with the CAA's Airspace Modernisation Oversight Team and, through that team, the co-sponsors of airspace modernisation (the CAA and DfT). We also expected that the OFF could be used to support airspace design change activity that is critical to the delivery of the implementation of the airspace masterplan NERL has been commissioned to deliver under the AMS. In appropriate circumstances, this could include activity for which NERL is not directly accountable. In such circumstances, we proposed that the DfT, as airspace modernisation co-sponsor and the public body responsible for the policy objectives of airspace modernisation, should have a key decision-making role.

9.33 Consistent with the approach taken for RP2, unutilised funds would be returned to users in future reference periods.

93 CAP 1249

### AMS support fund (ASF)

9.34 As noted in chapter 6 (regarding our own airspace policy and regulation activities), we also proposed to establish a support fund of £10 million over RP3, with an explicit focus on airspace modernisation, financed from the CAA's Determined Costs. We envisioned that this would be similar in nature to the RP2 FAS Facilitation (Small Gaps) Fund, but broader in scope to support implementation of the AMS. Like the RP2 Small Gaps fund, we intended that the ASF would be utilised to address projects that are important to the success of the AMS and where there are no other appropriate mechanisms for the recovery of these costs.

9.35 With the broader scope of the AMS, as compared to FAS, we expected the eligibility criteria for the ASF to be broader than the RP2 Small Gaps Fund. It should support AMS deployment including activity that is critical to the delivery of the implementation of the airspace masterplan that NERL has been commissioned to deliver under the AMS.

9.36 With the broader scope, we proposed to increase the scale of the fund from £7.5 million in RP2 to £10 million in RP3. We also proposed that the governance and decision-making arrangements for use of the ASF be expanded and integrated with, or linked to, the overall AMS governance arrangements.

## Stakeholder feedback

9.37 NERL considered that it required enough flexibility to respond to significant uncertainties in RP3, including Brexit and future developments and requirements such as airspace modernisation, drones and cyber security. It said that capex contingency and the OFF were required as contingency for its core plan, and if they were used for additional requirements (such as electronic conspicuity and drones) it would need to reduce the scope of its core plan correspondingly.

9.38 IATA supported capex contingency and the OFF noting their potential use within a targeted scope of AMS. It thought that an enhanced SIP process was a prerequisite for their use. IAG did not support capex contingency, the OFF or the ASF, as it thought that we had already allowed NERL sufficient funding in our draft proposals. PCS welcomed the OFF and ASF.

9.39 NERL thought the OFF would need to be larger if it was used for activities outside its core plan.

9.40 NERL supported the ASF subject to appropriate governance mechanisms to ensure that the CAA was not conflicted in its role as a delivery body and decision maker. IATA supported the ASF in concept, and expected that the governance mechanism would be fully reflective of its role in funding the system.

9.41 Prospect questioned whether £10 million would be sufficient for the ASF in RP3. It suspected that we would consider drones and "U-space" as part of the AMS

project but said it would welcome more information on where we believed the issue sits. Prospect also said it was crucial that NERL had enough funds to address issues around drones and electronic conspicuity.

## Developments since our draft proposals

9.42 Since our draft proposals, we have developed further policy and processes for capital expenditure governance, including the OFF and ASF, in RP3. We shared a working note with stakeholders in April 2019 and, following responses by stakeholders, sent stakeholders our draft policy and processes.[94] The policy and processes for capital contingency, the OFF and ASF were included in these documents.

9.43 The additional information in our working note included:

- clarification that use of the capital expenditure contingency allowance will be subject to the enhanced governance process, with the final decision on spend taken by NERL;
- a proposal that NERL and airlines should develop an agreed process to propose cases for funding by the OFF to the CAA for its approval. Where NERL and users agree that an activity should be funded from the OFF, we will approve its use unless there are compelling reasons not to. NERL can present a case for funding which users disagree with, but the onus would be on NERL to justify using the OFF, despite user objections; and
- a process for the use of the ASF to fund projects that are important to the success of the AMS and where there are no other appropriate mechanisms for recovering costs. Decisions on the use of the ASF would be made by a Decision Board which would include CAA and industry representatives. If the Board could not reach a decision on a funding proposal, it would be referred to the AMS co-sponsors. The fund will be available to non-NERL third parties.

9.44 In response to the working note, stakeholders (apart from IAG) supported the contingency and flexibility funds, although they had different views on their use. NERL thought they should be for contingency on its core plan, while IATA stressed the need for an enhanced governance process with a greater role for airlines to consider them. NERL and Virgin Atlantic responded to our draft policy and processes document, with their comments largely related to the governance of NERL's ongoing investment in RP3 rather than the uncertainty mechanisms.

[94] These are published on our website.

## CAA final conclusions

9.45 We confirm the key principles of the arrangements set out in our draft policy and processes working note document for the contingency and uncertainty funds as our final decision. This can be summarised as:

- NERL will have the final decision on capex contingency (£31 million in RP3), which is for unexpected events and outcomes and not intended to be used to deliver the programme in NERL's business plan for which we have provided funding. In carrying out an ex-post review of NERL's RP3 expenditure our starting presumption will be our expectation that NERL can deliver its programme in full for the amount allowed, with the onus on NERL to explain the unexpected events that have required any use of contingency;
- we will decide funding submissions to the OFF; and
- the governance for the ASF will involve a broader group of stakeholders, with the AMS co-sponsors (us and the DfT) having the final decision on disputed submissions.

9.46 We have also increased the OFF by £7 million to £42 million over RP3, to provide more funds to facilitate additional AMS (and possibly other) requirements that might arise.

9.47 In response to Prospect's question on drones and U-space, we note that whilst they are not currently explicitly listed as initiatives in the AMS, there are linkages with existing initiatives – for example, electronic conspicuity solutions – and that the AMS will be reviewed and initiatives updated as necessary. It remains our view that the OFF is primarily for supporting AMS. NERL should manage its operating costs within the cost allowances.

9.48 We have updated our NERL capital expenditure and AMS funds governance policy and processes document in light of stakeholder feedback - see Appendix I.

# Revision of performance targets (price control re-opener)

## SES requirements

9.49 Article 18 of the performance regulation sets out the circumstances in which the DfT might seek to revise UK performance plan targets. Specifically:

- that one of the alert thresholds mentioned above has been triggered and we have assessed that the effect of reaching the alert threshold cannot be mitigated, unless the performance target is revised; and/or

- the initial data, assumptions and rationales on which the performance target was set (and including on investments) is to a significant and lasting extent no longer accurate[95] due to unforeseeable circumstances and we have assessed that the effect cannot be mitigated, unless the performance target is revised.

9.50 In both circumstances the Commission must agree that the intended revision is necessary and proportionate, and assess that the proposed revised performance target is consistent with the relevant EU-wide performance target or targets.

## CAA draft proposals

9.51 Following Brexit, if NERL is subject only to the Transport Act the decision to re-open the price control will rest with the CAA. We proposed that we would only do so if there were compelling reasons to re-open the price control, bearing in mind our statutory duties, including for safety and to protect and further the interests of users. In any re-opening of the price control we would seek to protect the interests of users, including ensuring any inefficiencies on NERL's part were matters for its management and shareholders to address.

9.52 Our approach to date has been to not re-open a price control except under exceptional circumstances as to do so would weaken the efficiency incentives of economic regulation. The only occasion where we have re-opened a price control was after the severe reductions in traffic following the terrorist attacks of 11 September 2001. Even in that case the re-opening was only part of a package that included other measures, including requiring NERL to raise additional equity.

9.53 NERL said that the price control should not only be opened in "exceptional circumstances" but also in a broader range of circumstances, such as Brexit, electronic conspicuity and drones. If we did not agree to this, NERL said it would bear additional risks and its cost of capital should be higher.

## CAA final conclusions

9.54 Our final decision is to not re-open the price control except under exceptional circumstances.

9.55 We do not agree with NERL that we should be prepared to re-open the price control other than in exceptional circumstances. We consider that re-opening a price control creates moral hazard, weakening cost efficiency incentives and reducing the responsibility and accountability of the regulated company to follow its licence obligations in an efficient and effective manner.

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95 It is our view that this criteria would apply to decisions stemming from a Competition and Markets Authority reference.

9.56 We consider that our final decision has made provision to mitigate uncertainty in RP3 in a number of ways, including allowing NERL's operating costs to increase above historical trends and making available funding to it through the capital expenditure contingency allowance and the OFF.

Chapter 10

# Terminal Air Navigation Services

## Introduction

10.1 The performance scheme aims to enhance the performance of ANS through a gate-to-gate approach covering both en route and TANS.

10.2 This chapter:

- sets out UK TANS providers in scope of the performance scheme for RP3 and the exemptions for market conditions;
- sets out our approach to safety, environment and cost for TANS in RP3; and
- establishes the UK TANS capacity target for RP3.

## Scope

10.3 In respect of TANS, the performance regulation applies to airports with 80,000 or more IFR movements per year, measured by the average of the three years prior to the performance plan being submitted.

10.4 The UK airports in scope are currently serviced by three TANS providers – NATS Services Ltd (NSL), Air Navigation Services Ltd (ANSL) and Birmingham Airport Air Traffic Ltd (BAATL).

10.5 Table 10.1 below sets out the UK airports in scope for RP3.

**Table 10.1: Average annual movements (2016 to 2018) at airports in scope of performance scheme for RP3**

| Airport | TANS provider | Average annual movements |
|---|---|---|
| Heathrow (LHR) | NSL | 476,284 |
| Gatwick (LGW) | ANSL | 283,327 |
| Manchester (MAN) | NSL | 199,010 |
| Stansted (STN) | NSL | 189,086 |
| Edinburgh (EDI) | ANSL | 126,004 |
| Luton (LTN) | NSL | 133,923 |
| Birmingham (BHX) | BAATL | 113,309 |

| Airport | TANS provider | Average annual movements |
|---|---|---|
| Glasgow (GLA) | NSL | 92,759 |
| London City (LCY) | NSL | 82,030 |

Source: Eurocontrol

## Exemption from SES performance regulation

10.6 Recognising the potential for the development of competition to promote the interests of consumers, the regulatory framework allows Member States to determine whether the provision of TANS, communication navigation and surveillance (CNS), meteorological services for air navigation, aeronautical information services (AIS) or ATM data services are provided under market conditions.[96] If so, Member States may decide to exempt those services from:

- the application of cost efficiency targets, including the setting of Determined Costs;
- the application of traffic risk sharing and cost risk sharing mechanisms;
- the setting of financial incentives in the KPAs of capacity and environment;
- the calculation of terminal charges;
- the setting of terminal unit rates; and
- certain consultation requirements.

10.7 To establish whether a service is subject to market conditions, the Member State must have:

- undertaken a detailed assessment in accordance with the conditions laid down in Annex X of the performance regulation;
- consulted airspace users' representatives concerned on the intended decision and taken account of comments where appropriate;
- made its intended decision and assessment publicly available; and
- submitted its intended decision and assessment to the Commission and received the agreement of the Commission.

[96] Performance regulation, article 35

## Development of competition and recent assessment

10.8 Following our 2013 study,[97] we published further advice to DfT that there had been developments in the UK TANS market,[98] including:

- new service providers have established operations at Birmingham Airport and Gatwick Airport with no issues of service continuity or quality of service;
- after a tender process, Edinburgh Airport decided to change provider from NSL to ANSL; and
- some airport operators were able to re-negotiate or extend contracts with existing service providers on more favourable terms.

10.9 In late 2017 the DfT requested that we conduct an assessment of whether market conditions continued to exist in the UK TANS market.[99] We published our final advice confirming that market conditions continue to exist in April 2018.[100]

10.10 On 25 May 2018 the DfT sent our assessment to the Commission and set out the UK's intention not to calculate Determined Costs, set financial incentives or set terminal unit rates for TANS, in accordance with the provisions of the RP2 performance and charging regulations that were in force at the time.

10.11 We do not consider that the changes to the assessment criteria in Annex X of the RP3 performance regulation are such as to affect our conclusion that the provision of UK TANS is subject to market conditions for RP3.

10.12 On 24 January 2019 the Commission agreed with our assessment that the UK TANS market is subject to market conditions for RP3.[101]

# Safety

10.13 TANS providers are required to report their safety performance under EU regulations.[102] These are reported at a national level – see Chapter 2.

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97 CAP 1004 - SES Market Conditions for Terminal Air Navigation Services in the UK

98 CAP 1293 - Review of advice on SES Market Conditions for Terminal Air Navigation Services in the UK

99 Our assessment was conducted against the SES requirements in force at the time - Annex I of Commission Regulation 391/2013

100 CAP 1648 – Final Advice on Market Conditions for TANS in the UK (April 2018)

101 Commission Implementing Decision of 24.01.2019 on the establishment of market conditions for terminal air navigation services in the United Kingdom under Article 3 of Implementing Regulation (EU) No 391/2013

102 Commission Implementing Regulation (EU) No 2017/373

## Environment

10.14 The environment KPIs are set and reported on at a national level. There are three environment indicators for monitoring which have reporting requirements, but no targets, at the airport level.[103] These are:

- additional time in the taxi-out phase;
- additional time in terminal airspace; and
- the share of arrivals applying CDO.

10.15 In accordance with the performance regulation and consistent with our RP2 approach, we will continue to monitor and report on performance annually to the Commission.

10.16 In its response to our draft proposals, IAG questioned how the environment indicators for monitoring translated to incentives on TANS providers. We note that the performance regulation does not require targets or financial incentives to be set these indicators for monitoring. However, we consider they provide transparency over individual airport performance and as such may provide a reputational incentive.

## Cost efficiency

10.17 As the UK TANS market has been assessed to be subject to market conditions, we have not set cost efficiency targets or financial incentives in RP3. We will report on TANS cost efficiency in accordance with the performance regulation.

## Capacity

### SES requirements

10.18 The performance regulation defines the terminal capacity KPI as:[104]

- The average time, expressed in minutes, of arrival ATFM delay per flight attributable to terminal and airport ANS, calculated at local level as:
- the average arrival delay at the destination airport caused by ATFM regulations per inbound IFR flight;
- all IFR flights landing at the destination airport and all ATFM delay causes, excluding exceptional events; and
- for the whole calendar year and for each year of the reference period.

[103] Annex I, section 2, 2.2(c), (d), (e) of the performance regulation

[104] Annex I, section 2, 3.1(b) of the performance regulation

10.19 The performance regulation requires that the target is set at the national level and monitored at airport level.

## CAA draft proposals

10.20 We proposed the following target level of ATFM delay for TANS providers in RP3:

**Table 10.2: Proposed target level of ATFM delay (minutes per flight)**

| Airport | Capacity Target |
|---|---|
| Heathrow (LHR) | 1.95 |
| Gatwick (LGW) | 1.84 |
| Manchester (MAN) | 0.24 |
| Stansted (STN) | 0.54 |
| Edinburgh (EDI) | 0.01 |
| Luton (LTN) | 0.43 |
| Birmingham (BHX) | 0.09 |
| Glasgow (GLA) | 0.02 |
| London City (LCY) | 1.42 |
| **All airports** | **1.00** |

Source: CAA

10.21 Without an established and recognised approach to forecasting ATFM delay (or suggestions of an alternative, more suitable methodology), it is not straightforward to set targets for the future. We derived the target for RP3 from the information supplied by stakeholders and Eurocontrol, based on the average delay performance for 2014 - 2018 for each airport within scope of the performance scheme.

10.22 At the time of drafting our proposals only 2014-2017 data was available. In coming to our final target we updated our assumptions and methodology with 2018 data that had since been made available. This has had a minor impact on our proposed target (from 1.00 minutes per flight to 1.09 minutes per flight). This represents the average delay per flight across all TANS airports during the whole of RP3, and uses the average recent (2014-2018) historical performance applied to the corresponding traffic forecast for RP3 at each airport as the basis for the calculation.

10.23 We also assessed the RP3 business plan information from the TANS providers at the nine airports in scope (NSL, ANSL and BAATL). In general, these showed

that TANS providers expect ATFM delays in RP3 to be higher than historical performance. Without a clear and consistent forecasting method it is not clear why performance is expected to deteriorate, although it is acknowledged that forecast increased traffic could be a factor. TANS providers' business plans identified the following initiatives, which are anticipated to positively impact on ATFM delays in RP3:

- ANSL – staffing strategies, including policies that deliver the appropriate number of staff to ensure necessary resilience to staffing, equipment or other airport disruptions, and improved capacity performance resulting from the implementation of LAMP2 during RP3;
- NSL – airspace change in the Essex airspace (known as SAIP AD6) due late 2020. Continued engagement with airports and with NERL on their initiatives; and
- BAATL – investigation and implementation of new technologies and A-CDM in order to prioritise reduction of delay that is within its control.

10.24 A simple traffic forecast was developed at the airport level, using submissions provided by TANS providers and the STATFOR February 2019 forecast for the UK. Greater increases in aircraft movements are forecast at airports with lower average delay targets. The individual airport delay targets were applied to these forecasts, in effect creating a single "weighted average" for the UK across RP3. For our final decision, an update to the traffic forecast was made at the airport level using Eurocontrol data, and the individual airport delay targets were applied to these forecasts, with an updated "weighted average" for the UK across RP3.

10.25 Forecasts produced by STATFOR and the ANSPs both indicated growth in IFR movements that may put greater pressure on delays in the future. However, we consider that the existence of a market between TANS providers creates scope for competitive tensions to incentivise operational (including delay) performance improvements and for partnership working with airport operators and the airline community. We also consider that South East airports should expect capacity benefits from the delivery of AMS and FASI-S towards the end of RP3.

10.26 The table below summarises each airport's performance from 2014 to 2018 and compares that against the forecast performance for RP3 as set out in the business plans. The weighted average is also shown.

**Table 10.3: All causes ATFM delay at airports covered by ANSP business plans**

| Airport | Historic average (2014-2018) | Average RP3 forecast outcome (from business plans) | Indication of direction of performance |
|---|---|---|---|
| Heathrow (LHR) | 1.93 | 2.00 | ↑ |

| Airport | Historic average (2014-2018) | Average RP3 forecast outcome (from business plans) | Indication of direction of performance |
|---|---|---|---|
| Gatwick (LGW) | 2.04 | 2.85 | ↑ |
| Manchester (MAN) | 0.22 | 0.32 | ↑ |
| Stansted (STN) | 0.72 | 2.00 | ↑ |
| Edinburgh (EDI) | 0.02 | 0.01 | ↓ |
| Luton (LTN) | 0.47 | 1.00 | ↑ |
| Birmingham (BHX) | 0.09 | 0.14 | ↑ |
| Glasgow (GLA) | 0.01 | 0.05 | ↑ |
| London City (LCY) | 1.38 | 1.42 | ↑ |
| **All airports** | **1.12** | **1.45** | ↑ |

Source: CAA/Eurocontrol

10.27 Table 10.4 below shows the level of all causes ATFM delay since 2014. Many of the airports have seen increased delay over this period, particularly those which have also experienced significant increases in traffic.

**Table 10.4: All causes ATFM delay for airports in scope (minutes per flight)**

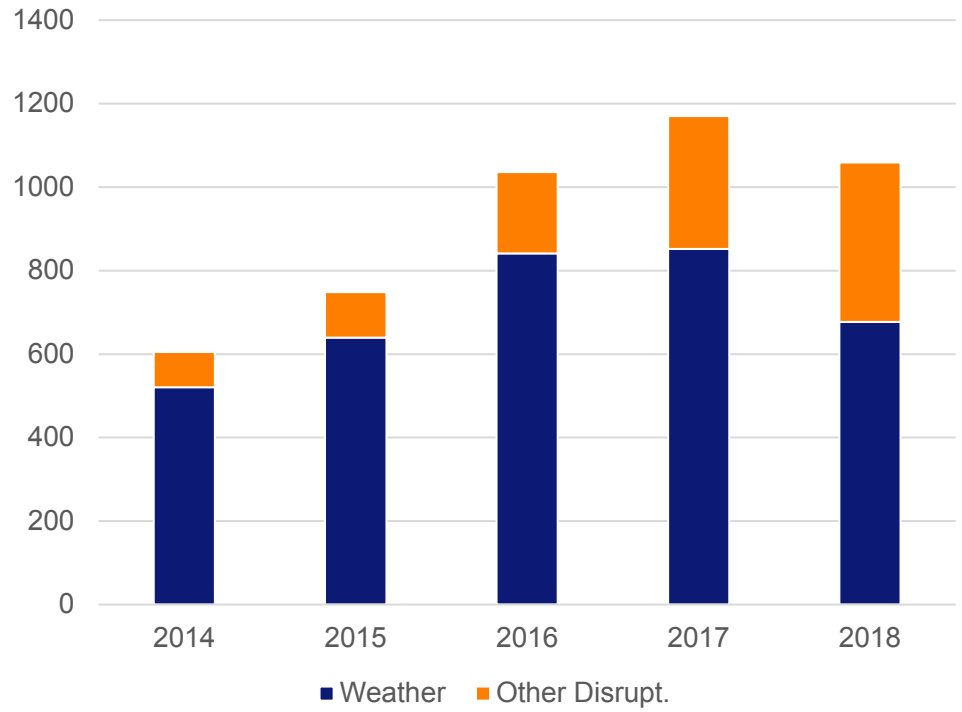
| Airport | 2014 | 2015 | 2016 | 2017 | 2018 | Historic average (2014-2018) |
|---|---|---|---|---|---|---|
| Heathrow (LHR) | 1.89 | 2.12 | 1.86 | 1.92 | 1.84 | 1.93 |
| Gatwick (LGW) | 0.69 | 1.03 | 2.41 | 3.18 | 2.71 | 2.04 |
| Manchester (MAN) | 0.07 | 0.25 | 0.10 | 0.52 | 0.14 | 0.22 |
| Stansted (STN) | 0.08 | 0.34 | 0.81 | 0.93 | 1.25 | 0.72 |
| Edinburgh (EDI) | 0.01 | 0.00 | 0.02 | 0.00 | 0.07 | 0.02 |
| Luton (LTN) | 0.05 | 0.28 | 0.83 | 0.55 | 0.55 | 0.47 |
| Birmingham (BHX) | 0.03 | 0.00 | 0.06 | 0.23 | 0.08 | 0.09 |
| Glasgow (GLA) | 0.00 | 0.02 | 0.00 | 0.04 | 0.00 | 0.02 |
| London City (LCY) | 1.35 | 0.97 | 1.77 | 1.57 | 1.25 | 1.38 |

| Airport | 2014 | 2015 | 2016 | 2017 | 2018 | Historic average (2014-2018) |
|---|---|---|---|---|---|---|
| **All airports** | **0.79** | **0.95** | **1.19** | **1.37** | **1.24** | **1.12** |

Source: CAA/Eurocontrol

10.28 ATC attributable delay represents a small part of total ATFM delay that is recorded. A significant proportion of delay is due to weather, and over 2014 to 2018 weather delays have increased significantly.

**Figure 10.1: Total annual weather and other delay minutes for airports in scope (000s)[105]**




10.29 In its response to our proposed target, NSL noted that it considers that the proposed capacity target will be unachievable from the outset and does not take sufficient account of traffic growth, especially at Stansted and Luton. NSL considered that targets that are consistent with the average historical delay do not properly recognise increasing levels of delay during that period or forward growth forecasts. However, IAG noted that it considered the proposed ATFM delay targets at London airports to be inadequate, noting that no providers have proposed an improvement in delay at any UK airport. IAG also noted a lack of evidence around worsening weather as a reason for increased delay over RP2.

10.30 We understand that the magnitude of delays attributed to weather reasons have increased over recent years due to increased traffic and congestion, however the

[105] Eurocontrol Performance Review Unit, 2014-2018, http://ansperformance.eu/data/performancearea/

number of weather “events” itself is inherently unpredictable. Given that weather reasons formed approximately two thirds of all delay minutes incurred in 2018, its unpredictability and the absence of any approved traffic forecasting methodology, we believe that using an average of recent delay performance at the airport level is the most practicable way to predict future weather events.

## CAA final conclusions

10.31 Recognising the lack of agreed ATFM forecasting framework, we consider that average recent (2014-2018) historical performance at the airport level, taking into account forecast traffic growth, is the most logical and proportional method to derive the single Terminal Capacity KPI for the all airports in scope. This takes into account the volatility of delay performance, generally providing a balance of annual targets which have been met recently by airports, but also representing an improvement on the very latest results. We acknowledge the nuances and variability of ATFM delay across Europe, and the high proportion of which is attributable to weather, which is unpredictable by its nature and hard to mitigate in terminal airspace.

10.32 Our final decision on the UK TANS capacity target for RP3 is 1.09 minutes/flight. This represents the average delay per flight across all TANS airports during the whole of RP3. The target is established at the UK level, but we will report on performance on an airport by airport basis.

**Table 10.5: Final RP3 target level of ATFM delay (minutes per flight)**

| Airport | Capacity Target |
|---|---|
| Heathrow (LHR) | 1.93 |
| Gatwick (LGW) | 2.04 |
| Manchester (MAN) | 0.22 |
| Stansted (STN) | 0.72 |
| Edinburgh (EDI) | 0.02 |
| Luton (LTN) | 0.47 |
| Birmingham (BHX) | 0.09 |
| Glasgow (GLA) | 0.01 |
| London City (LCY) | 1.38 |
| **All airports** | **1.09** |

Source: CAA

## Indicators for monitoring

10.33 The capacity indicators for monitoring for TANS are as follows:[106]

- the percentage of IFR flights adhering to their ATFM departure slots;
- the average minutes of air traffic control pre-departure delay per flight caused by take-off restrictions at the departure airport; and
- the average time, in minutes, of departure delay from all causes per flight, calculated from the average delay attributable to:
- delays due to airline operations;
- en route ATFM delay reported by airspace users;
- reactionary (knock-on) delay; and
- airport operations delay, including ATFM airport delay reported by airspace users caused by regulation based on traffic volume which has a reference location classified as Aerodrome Zone or Aerodrome.

10.34 We will continue to monitor these indicators as part of our annual report to the Commission.

[106] Annex I, section 3.2 of the performance regulation

Chapter 11
# Oceanic

## Introduction

11.1 This chapter sets out our final price control decisions for NERL's Oceanic service for the period 2020-2024. The Oceanic service falls outside of the scope of the SES performance scheme; instead, we regulate the maximum charge that NERL can levy on users for its Oceanic service by conditions in the NERL licence (issued under the Transport Act).[107]

11.2 This chapter:

- provides an overview of NERL's Oceanic services and its price control arrangements;
- summarises the CAA's draft proposals for the 2020-2024 period, stakeholder feedback on these and recent developments; and
- sets out the CAA's final decision on satellite ADS-B services and the Oceanic price control building blocks.

11.3 The decisions set out in this chapter will be translated into a new charge control condition in NERL's licence for Oceanic services that will apply for the five years from 1 January 2020 to 31 December 2024.

## NERL's Oceanic service

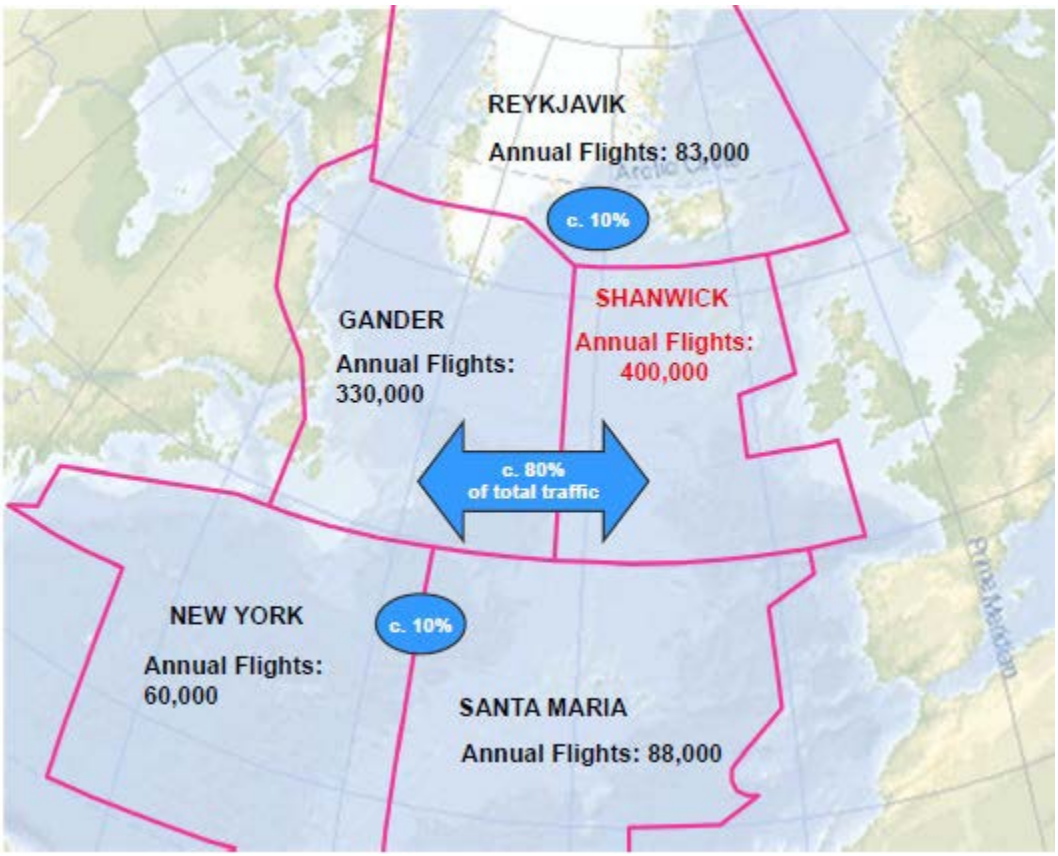
11.4 As shown in Figure 11.1, there are five Oceanic Control Areas across the North Atlantic.[108] The management and development of this airspace is governed by ICAO through the North Atlantic System Planning Group (NATSPG) and subgroups. The majority of flights (c.80%) are handled by a combination of the Shanwick service and the service provided by Nav Canada from Gander.

11.5 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.

[107] We note that the EU regulatory obligations relevant to the performance plan will not restrict any flexibility that may be required to develop the Oceanic price control

[108] ICAO considers there are six Oceanic control areas – Bodo is not shown in Figure 11.1

**Figure 11.1: Oceanic Control Areas in the North Atlantic (from 2014)**




Source: NERL

11.6 The Oceanic service is a relatively small part of NERL's business, constituting about 4% of NERL's total costs and revenues in RP2. The Oceanic RAB represents about 4% of NERL's total RAB.

11.7 The previous price control was set in March 2015. The maximum charge per flight was £64.93 (in 2015 prices) and subsequently declined by the change in the CPI less five percent (CPI-5%) in each year until 2019.

## Introduction of satellite-based ADS-B services

### NERL's proposed approach to delivering the service in RP3

11.8 At present, Oceanic is a non-surveillance operation (meaning there is no radar coverage). Separation of aircraft is assured through the clearance and management of planned flight trajectories. For transatlantic flights there is an organised track system (OTS), planned on a twice-daily basis, depending on the position of the prevailing jet stream, to minimise the adverse effect on westbound flights and maximise the benefits to eastbound flights.

11.9 NERL's proposals for delivering the Oceanic service in RP3 included the introduction of a space-based automatic dependent surveillance – broadcast (ADS-B) system. This would involve satellites providing more accurate and timely

aircraft position information, compared to the current procedural approach. NERL has said that this will improve flight efficiency, increase capacity and ensure a safe operating environment (including meeting the ICAO safety standard in Shanwick in the context of continuing traffic growth), and would benefit airlines, and their passengers, through lower costs and the potential for more choice through additional flights.

11.10 NERL estimated the proposed introduction of ADS-B would increase the cost of the Oceanic service by approximately £31 per flight – an approximate 60% increase above the charge levied in RP2 for a typical North Atlantic crossing.

11.11 NERL's RP3 business plan provided a financial impact assessment of the ADS-B proposal for the North Atlantic airspace. This was not a full cost-benefit analysis since it did not attempt to capture all societal costs and benefits, but instead focused on the potential fuel savings that could be achieved by introducing ADS-B and related changes over the North Atlantic.

11.12 The CCWG Co-Chairs' Report noted that there were significant concerns from airlines about NERL's ADS-B proposal, particularly in relation to:

- the extent of safety improvements and whether any such improvements justify the (c.60%) increase in the cost of the service;
- whether the fuel benefits estimated by NERL are achievable; and
- whether the user preferred route (UPR) benefits are realisable in practice, given the operational change management challenges.

11.13 In addition, airlines generally noted that they felt that NERL's Oceanic plan was determined without regard to their views and concerns.[109] The CCWG Co-Chairs' Report also noted that no agreement for the basis of charging for the service had been reached, although airlines have said they do not want to see the application of any weight by distance-based charge or by hour.

11.14 We understand that users sought to develop their own view on the scale of potential benefits from introducing ADS-B. However, at the time of development of our final decisions no such analysis has been made available to us by users or their representatives.

## CAA draft proposals and stakeholder feedback

### Assessment of costs and benefits

11.15 In reaching our draft proposals we conducted a simplified cost-benefit analysis of NERL's proposal. This analysis was based on a high-level view of the costs to

[109] IATA response to NERL RP3 business plan, p.2

users and a prudent view of benefits that might be achieved . This conservative view indicated that there would be advantages to users in introducing ADS-B.

11.16 In addition, in our draft proposals we noted the study[110] by ICAO on ADS-B business case which concluded that there is an NPV benefit of US$168 million (in 2016 prices) for the six Oceanic control areas in the Atlantic. On a per-flight basis, this is smaller than NERL's estimated benefits, although the net benefits remained positive.

**Risk allocation**

11.17 NERL's RP3 business plan noted that its contract with the provider of the ADS-B service, Aireon, would entail the payment of a fixed annual sum. NERL proposed that it should be allowed to recover its forecast ADS-B costs in full via Oceanic charges, regardless of traffic levels in Shanwick. NERL's proposal meant that users would pay more for the service when traffic volumes are lower and pay less for the service when volumes are higher. This would have the effect of allocating all volume risk relating to Aireon contract costs to airlines (but NERL would continue to bear all volume risk relating to the other costs of the Oceanic service).

**Investment in Aireon**

11.18 On 16 May 2018 it was announced that NSL had purchased a 10% stake in Aireon. This occurred while NERL was in the process of negotiating with Aireon for the use of its services to provide ADS-B coverage over the North Atlantic. NSL's ownership stake in Aireon raised concerns over a potential conflict of interest given its potential role as provider of ADS-B services to NERL.

11.19 We challenged NERL to demonstrate that appropriate ring-fencing arrangements were in place in regards to its relationships with NSL and Aireon. The cost allocation report[111] we commissioned did not identify areas of concern.

11.20 NERL's business plan stated that appropriate governance was in place throughout the acquisition process to ensure separation of people and knowledge between the NERL team negotiating for ADS-B data services and the NSL acquisition team. NERL states that, with regard to ongoing arrangements, the governance structure of the ANSP-led shareholding in Aireon is such that there is no scope for higher individual pricing for NERL data services compared to other Aireon customers.

11.21 Our regulatory framework provides for ring-fencing arrangements between NSL and NERL. In our draft proposals we stated that we will continue to monitor the

[110] Including Bodo region, not included in Figure 11.1. ICAO, Summary of Discussions and Conclusions of the fifty-third meeting of the North Atlantic Systems Planning Group (June 2017)

[111] CEPA, Cost Allocation and Non-Regulatory Income Report (January 2019)

ring-fencing arrangements and proposed to introduce additional governance and performance monitoring of Oceanic services and charges.

**Governance and performance monitoring**

11.22 Moving to an ADS-B-based service for Oceanic would represent a significant cost increase for users. It is important that users only pay for that cost increase if they receive an improved service. Bearing in mind NSL's investment in Aireon, we proposed to strengthen the existing governance arrangements that apply to the Oceanic service.

11.23 We proposed that:

- the NATS Board would be required to certify that it was operating a fully ADS-B-based service for its Oceanic airspace, before NERL would be permitted to recover the allowed ADS-B costs through the Oceanic charge;
- we expected NERL to work with users to agree a set of reporting criteria and measures for the Oceanic service that would be reported on every six months in accordance with NERL's licence Condition 11, so that stakeholders understand the service improvements that are achieved by deploying ADS-B;
- NERL would verify that the benefits derived by users from ADS-B have indeed exceeded the incremental costs recovered from users, once the ADS-B-based service has been operational for a reasonable period of time; and
- subject to appropriate governance, NERL would conduct a review of the benefits two years after the introduction of ADS-B, to objectively explore whether the benefits have exceeded the costs and are expected to continue to do so in the future. NERL would also be required to demonstrate user support for the use of ADS-B in providing the Oceanic service. If NERL was not able to demonstrate that the benefits of the system outweighed costs and/or user support at the two-year review, we would consider re-opening the Oceanic price control to ensure that NERL recovered costs proportionate to the benefits of the system for users.

## Stakeholder feedback

11.24 NERL welcomed our acceptance of the ADS-B service. However, it noted that it would revert to a variable contract for North Atlantic crossing given our rejection of its proposals for a cost pass-through mechanism. On governance arrangements, NERL has said it is content to provide a full-operability certificate and report on agreed ADS-B related metrics. However, it disagreed with the review of the ADS-B benefits in 2022. According to NERL, this should be scheduled for RP4 instead, and focus on objectively measuring progress in delivering the benefits case.

11.25 The airline community broadly opposed the introduction of ADS-B service in the timeframe and for the costs proposed. They stressed that ADS-B related costs are too high and outweigh the benefits. Airlines also said that NERL, ICAO NAT SPG[112] and CAA had used flawed assumptions in the analysis of costs and benefits, including reduced separation standards applicable for the baseline, reduced latitudinal minima and reduced longitudinal separation minima (related to Performance Based Communications and Surveillance (PBCS) requirements) as compared with Advanced Surveillance-Enhanced Procedural Separation using Space-based ADS-B.

11.26 In addition, airlines remain concerned about contractual arrangements with Aireon, noting conflicts of interest and the potential restrictions on competition created by a of long term contract. They also note the costs of ADS-B service range from $1 per flight hour to $40 per flight hour depending upon airspace characteristics, with NERL's proposal of $40 per flight hour being the highest tier charge.

11.27 On governance they note that board certification that NERL operates fully ADS-B based service will only partially address the benefits aspects and may remain open to interpretation.

11.28 In light of these concerns, airlines identified a number of options, such as separating Oceanic from the domestic RP3 performance plan, deferring the adoption of ADS-B service or adopting charging arrangements that reflect the benefits delivered rather than costs incurred.

11.29 PCS and Prospect broadly support introduction of ADS-B service. In particular, they noted that the two-year review should be in the context of airspace users taking reasonable steps to avail themselves of the benefits offered by the use of ADS-B services within Oceanic airspace.

## CAA final conclusions

11.30 We remain of the view that there is a positive benefits case of introducing the ADS-B for Oceanic services, and that our analysis of the costs and benefits was based on conservative assumptions and supports the introduction of ADS-B for Oceanic services. In addition, we received no new evidence that would merit modifying our analysis of the costs and benefits. We also note that NERL considers that ADS-B will enable the Oceanic service to meet ICAO's target level of safety for vertical collision risk.

[112] North Atlantic Systems Planning Group

11.31 Bearing in mind the continuing concerns raised by the airspace users, notably around whether actual benefits will be realised, our final decision is also to further strengthen our proposed governance arrangements, as outlined below.

11.32 Our final decision retains the review after two years of the benefits ADS-B service and this review will seek to objectively explore whether the ADS-B related benefits have exceeded the costs, and whether this is expected to continue to do so in the future.

11.33 The review will be conducted independently (rather than by NERL, as in our draft proposals) but will no longer be required to demonstrate user support (although this would be highly desirable). Should the reviewer conclude that the benefits are broadly aligned to the ADS-B costs, we will not apply any penalty or reward. However, if either benefits to users significantly exceed costs or conversely that costs for users are greater than the benefits then the following incentive arrangements would apply.

11.34 We envisage that an outcomes incentive would work as follows:

- should the delivery of ADS-B service by 2022 prove successful with a substantially high rate of the benefits being delivered, we would review our decision to apply a -5% efficiency adjustment to the data charge for 2023 and beyond;
- however, should the expected costs for users exceed the benefits then we will review the regulatory allowance for ADS-B costs with a view to reducing these allowances so that they are proportionate to the benefits, subject to a check on the financeability of NERL's activities;

11.35 We will work with stakeholders to develop the metrics that we will require NERL to report against every six months according to Condition 11 of the NERL licence (and which also will form the basis for 2-year review). A separate workshop will be organised in autumn 2019 to discuss these matters. The performance metrics will broadly encompass, but will be not limited to, the areas outlined in our draft proposals on:

- safety;
- speed restrictions;
- flight trajectory;
- ASEPS implementation; and
- estimated fuel savings.

11.36 Our final decision is also to require the NATS Board to certify that it is operating a fully ADS-B-based service for its Shanwick airspace. Without such certificate

being presented, NERL will not be permitted to recover the allowed ADS-B costs through the Oceanic charge from the beginning of RP3.

## Oceanic price control building blocks for RP3

11.37 The method for calculating the Oceanic price control is similar to the method we adopted for calculating NERL's en route price control.

### Traffic forecast

11.38 Our draft proposals were based on a flight forecast developed by NERL in its business plan. STATFOR does not publish a dedicated Oceanic forecast.

11.39 Following publication of our draft proposals NERL issued an updated Oceanic traffic forecast for RP3 in May 2019. The revised forecast for North Atlantic crossing is around 2.6% higher than the previous forecast.

11.40 We have used this latest traffic forecast in these final decisions.

11.41 Draft and final traffic figures are presented in the table below.

**Table 11.1: Total Oceanic flights (in 000s)**

| | RP2 | | RP3 | | | | |
|---|---|---|---|---|---|---|---|
| | 2018 A | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Draft proposals | 508 | 513 | 524 | 533 | 546 | 559 | 569 |
| Final decision | 502 | 517 | 528 | 539 | 552 | 565 | 576 |

Source: NERL

Note: In NERL's regulatory accounts, the number of flights in 2018 is 499,000. This difference may be due to update to the number of flights since publication of regulatory accounts.

### Other price control building blocks

11.42 The building blocks and the adjustments used in for our draft proposals are summarised below:

- for staff opex we applied -2.3% adjustment to NERL's business plan forecast consistent with our adjustment to NERL's en route opex;
- for non-staff opex we applied -5% reduction reflecting broad estimate of the potential for efficiency gains;
- for capex we applied a -5% reduction due to limited justification provided by NERL on Oceanic capital programme;
- for pensions we have made similar adjustments as for NERL's en route business;

- we applied a WACC of 2.84% consistent with NERL's en route business; and
- ADS-B related data charges were reduced by -5% compared to NERL's business plan. This reflected the uncertainty associated with the lack of benchmarking information from NERL to properly justify its prices in its contract with Aireon. The adjustment represents an approximately £4 million reduction compared to NERL's submitted costs given the May 2019 forecast.

11.43 NERL did not agree with our proposed adjustments to opex, capex and ADS-B data charges. It said these factors would mean that there should be a higher allowance for the cost of capital given the business risks that they would create.

11.44 IAG was broadly content with our review of staff costs and non-staff costs.

11.45 PCS and Prospect did not agree with proposed adjustments to the building blocks, considering that the adjustments were arbitrary and not fully justified.

## CAA final conclusions

11.46 Although respondents expressed reservations about key aspects of our final decisions relatively little new evidence was put forward.

11.47 Our final decision is to maintain our draft proposals policy on the basis of the assumptions on building blocks discussed above. This includes maintaining consistency on the WACC with NERL's main price control (which we have increased to 2.91% for our final decision). Our decision on arrangements on ADS-B services set out below aligns NERL's revenues with the volume cost drivers in its ADS-B contract and so provides a degree of protection from traffic risk. This supports our decision to align the WACC with NERL's main price control, which has traffic risk sharing mechanism.

11.48 For ADS-B unit charge we have used USD$1.3/£1 currency exchange rate as proposed by NERL. We cross checked this with the exchange rate futures for the midpoint of RP3, and also analyst forecasts. Based on these cross checks, this exchange rate is a plausible assumption for the RP3 period.

11.49 In addition, for both core and ADS-B related charges we will index these to the outturn CPI inflation.

11.50 Table 11.2 summarises our final decisions for the Oceanic building blocks for RP3. These include two additional blocks (Exceptional Items and Other Income, both relatively low materiality) to fully illustrate the charging calculation.

**Table 11.2: CAA final decision on Oceanic building blocks for RP3**

| | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| Operating cost (staff and non-staff) | 16.5 | 17.1 | 17.4 | 16.9 | 16.1 |
| Exceptional items | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Pensions | 3.7 | 3.6 | 3.9 | 2.7 | 2.6 |
| Other income | -0.6 | -0.6 | -0.6 | -0.5 | -0.5 |
| Regulatory depreciation | 6.8 | 5.7 | 5.4 | 5.4 | 5.6 |
| Return on RAB | 1.3 | 1.2 | 1.2 | 1.1 | 1.0 |
| **Total core costs** | **27.8** | **27.2** | **27.3** | **25.7** | **24.9** |
| Traffic forecast: North Atlantic (000s) | 497 | 507 | 519 | 530 | 540 |
| Traffic forecast: Tango (000s) | 31 | 32 | 33 | 35 | 36 |
| **Unprofiled core charge per flight (£)** | **52.7** | **50.4** | **49.5** | **45.4** | **43.3** |
| ADS-B data costs: Tango | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| ADS-B data costs: Atlantic (NA) | 14.8 | 15.1 | 15.4 | 15.8 | 16.0 |
| **Unprofiled ADS-B data charge per NA crossing** | **29.7** | **29.7** | **29.7** | **29.7** | **29.7** |
| **Unprofiled ADS-B data charge per Tango area crossing** | **4.6** | **4.4** | **4.3** | **4** | **3.9** |

Source: CAA. Note: core charge per flight include combined North Atlantic and Tango routes traffic in the denominator.

# Charging structure

## Profiling of charges

11.51 NERL proposed that it was not appropriate to apply profiling of Oceanic charges because of the ADS-B costs, and that NERL's pass-through proposal could create fairly large year-on-year changes in Oceanic charges. They proposed that prices should be established by simply dividing projected costs by projected traffic each year.

11.52 IAG are supportive of our proposed approach to not profile the charges for Oceanic given their understanding of European context.

11.53 Consistent with our approach to UKATS en route charges, we agree that it is not appropriate to adopt price profiling. This, in our view, will help to maintain better costs' reflectivity in charges by simply dividing projected costs by projected traffic.

## Tango routes

11.54 NERL proposed to introduce two charge rates for the Oceanic service in RP3 – a charge for using the main North Atlantic airspace crossing that reflected the full cost of ADS-B services, and a lower charge for using the South East corner of Shanwick airspace, to reflect the potential to provide ATM services in the south-east corner through alternative land-based surveillance sources to satellite based ADS-B.

11.55 We welcomed NERL's proposal to make charging more cost-reflective and charge a separate, lower charge for Tango routes. Our draft proposals did not explicitly separate the price control into different Oceanic charges. However, stakeholders were supportive of the proposal to have two different charges for North Atlantic crossing and Tango routes.

11.56 NERL's licence currently establishes that the price control that we set represents a limit on average charges levied by NERL for its Oceanic service. Given that separating the Tango and North Atlantic charges will improve cost-reflectiveness as well as transparency of charges, we intend to review the drafting of NERL's Oceanic charge restriction licence condition to allow for separate charges for North Atlantic crossing and Tango routes.

## Separation of core and ADS-B charges

11.57 NERL's business plan noted that the contractual arrangement with Aireon would involve a fixed lump sum contract for both charging areas of Shanwick airspace. This was subject to a provision that we would allow a full pass through of the ADS-B data charges. We did not adopt this approach in our draft proposals.

11.58 In its response to our draft proposals NERL highlighted that the fixed lump sum arrangement for North Atlantic crossing was no longer a feasible option on the basis of its negotiation with Aireon. However, a lump sum arrangement remains feasible for Tango routes.

11.59 We have reviewed our approach on these matters in the light of this information and the wider representations that we have received that we should consider the advantages of traffic risk sharing.

11.60 Our final decision is to fix the data charge per flight as part of these final decisions and then allow NERL to recover this fixed data charge per flight for North Atlantic crossing based on actual number of flights. On this basis, the total revenue NERL will be able to recover from airlines will depend on the level of traffic that materialises, and in broad terms this should reflect the trend in its ADS-B costs for the North Atlantic (i.e. when volumes are higher than total costs will be higher and vice versa).

11.61 For Tango routes, we maintain our proposed fixed price contract arrangement. This will effectively mean that the related data charges for the Tango routes will be adjusted downwards if the actual traffic turns out to be higher than forecasted and vice versa.

## Traffic risk sharing mechanism

11.62 Our draft proposals invited stakeholders to comment on whether the Oceanic price control would benefit from introduction of traffic risk sharing mechanism. We received two responses both of which were positive about such adjustment.

11.63 However, the proposed North Atlantic charging arrangements outlined above mitigates some of the traffic risks from the introduction of the ADS-B service. Bearing this in mind our final decision is not to adopt a formal traffic risk sharing mechanism.