Consumer and Markets Group

Draft UK Reference Period 3 Performance Plan proposals

For consultation

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Contents

Contents **3**

Executive summary **5**

Chapter 1 – Introduction and background **14**

Chapter 2 – Safety **25**

UK approach to safety 25

SES requirements 26

Chapter 3 – Environment **29**

SES requirements 30

Additional UK indicator – 3Di 30

Other Performance Indicators 35

Chapter 4 – Capacity **38**

SES requirements and capacity KPIs 39

C1 proposals 40

C2 proposals 40

Additional capacity metrics – C3 and C4 42

Summary of all service quality incentives 46

Chapter 5 – NERL RP3 costs **48**

Operating costs (excluding depreciation and pensions) 49

Pension costs 59

Capital expenditure in RP3 63

Chapter 6 – Overall costs **70**

Components of UK unit rate: Met Office 70

Components of UK unit rate: Department for Transport 72

Components of UK unit rate: CAA 73

Summary of overall UK en route total and unit cost 75

Chapter 7 – Financeability **77**

Regulatory asset base 77

Regulatory depreciation 79

Cost of capital 81
Financeability 83
Chapter 8 – London Approach 88
Addition of Biggin Hill Airport to the London Approach 88
Cost allocations 89
Reporting on NERL's performance 91
Chapter 9 – Uncertainty mechanisms 93
Traffic risk 93
Costs risk 95
Revision of targets (price control re-opener) 98
Chapter 10 – Terminal Navigation Services 100
Scope 100
Safety 102
Environment 103
Cost efficiency 103
Capacity 103
Chapter 11 – Oceanic 108
NERL's Oceanic service 108
NERL's proposals to introduce satellite-based ADS-B services 111
Oceanic price control building blocks for RP3 117

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.

3. The current Reference Period 2 (RP2) runs from 1 January 2015 to 31 December 2019. Reference Period 3 (RP3) will run from 1 January 2020 to 31 December 2024. In preparation for RP3 the UK must develop a performance plan and targets consistent with EU-wide targets set by the European Commission; with the targets for NERL given effect through its economic licence. The performance scheme has a broad 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 gives the CAA a primary duty to exercise its functions so as to maintain a high standard of safety in the provision of air traffic services. It also places a duty on NERL, as the licence holder, to provide a safe system for air traffic services. The EU regulations also emphasise the importance of safety.

5. The overriding priority for NERL remains the safe operation of UK airspace, including planning for the growth in air traffic movements that is expected over the RP3 period. In this context, 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 – UK airspace – and deliver a broad range of benefits in all key performance areas and more widely. Our final RP3 performance plan will also need to provide sufficient flexibility for NERL to respond to the uncertainties associated with Brexit. We hope that by the time we make final proposals for the RP3 in the summer, changes and impacts associated with Brexit (in the context of the performance plan) will be better understood.

6. NERL will need to respond flexibly to these changes and remain accountable for continuing to deliver its service to a high standard and for an efficient price, 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. If, in due course, NERL accepts our performance plan and the associated licence modifications that give effect to this, 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. NERL's focus in delivering outcomes and outputs should always be in the context of maintaining and/or improving safety.

Developing our proposals to protect consumers

7. Historically NERL has demonstrated strong performance and been able to achieve good efficiencies while delivering a high level of service. In making proposals for the RP3 period we have assumed that NERL will be able to make efficiency savings in line with historical performance, in part as its large programme of technological and airspace modernisation that is already underway should deliver longer term efficiencies.

8. 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 provide important strategic context for our work on the development of the UK performance plan. We have considered how to facilitate the successful delivery of these as part of our proposals and ensured there are mechanisms that will allow flexibility and appropriate protection to support these changes. We have, also allowed cost increases at the end of RP2 that, in particular, should provide a kickstart for airspace modernisation work that will take place during RP3 and allow NERL to deliver a more resilient service.

9. In preparing their RP3 business plan, NERL conducted an extensive customer engagement programme with users and airports. The process was well planned to ensure that the meetings were effective, with open and constructive discussions between NERL and its customers. Airspace users were positive about the process but thought that on some specific topics NERL's mind-set appeared to be predetermined. We consider that NERL's RP3 proposals to date could demonstrate more ambition and provide more assurance to users that its forecasts reflect efficient levels of capital and operating costs. Airspace users and our consultants have provided feedback that it has been difficult to form a view on NERL's proposals, especially around the benefits that can be expected from different programmes. As we said in our January 2018 business plan

guidance to NERL – it is in a privileged position as a monopoly provider of nationally vital services, and it needs to earn the confidence of all relevant stakeholders to support this position. Well-evidenced proposals, backed by clarity over options and their expected benefits, would go towards supporting this, and NERL needs to make further progress in delivering for stakeholders on these matters.

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

- historical analysis/trends (top down analysis);
- independent in-depth consultant studies (bottom up analysis); and
- customer consultation process, including the Co-Chairs' Report and bilateral meetings with airspace users.

11. Our proposals for NERL's main UK en route activity provide a greater level of challenge on financial and cost efficiency compared to those in NERL's RP3 business plan, including:

- a 2.3%pa unit cost reduction for opex (excluding pensions) and additional challenge on non-regulatory income;
- a reduction of 8% of forecast capital expenditure, other than that related to airspace programme costs;
- sharper incentive and governance arrangements that apply to NERL's capital expenditure to promote capital efficiency. The price control arrangements will mean that efficiently incurred capital expenditure that NERL has consulted on with users in RP3 will be added to NERL's regulatory asset base;
- stronger incentives on service quality performance; and
- using market evidence and taking account of regulatory precedent, to determine a pre-tax Weighted Average Cost of Capital of 2.84%, compared to NERL's proposal of 5.07%. This is discussed in chapter 7.

12. These assumptions result in a NERL en route Determined Unit Cost of £43.09 (2017 prices), compared to £49.85 in NERL's RP3 business plan.

13. Our draft proposals reflect high level assumptions necessary to formulate a price control on NERL's activities and proposals to strengthen the incentives to provide its services efficiently. We are not seeking to make or determine the business decisions that should be better made by NERL's management. It will be up to NERL to decide on whether to accept our final proposals and how best to run its business, taking account of its statutory and licence obligations for safety and quality of service. We consider that NERL should be best placed to engage with and be responsive to its customers, run its business efficiently and meet its

licence obligations to provide a resilient service with sufficient capacity to meet all reasonable demand.

Interdependencies

14. Recognising the primacy of safety in both EU and domestic legislation (with duties on both the CAA and NERL in respect of safety) we are clear that safety must always be protected and that traffic would be constrained where necessary to ensure this. Ahead of our final proposals, we will task NERL to provide an assessment of safety and analysis of potential changes to their functional systems and relevant mitigation measures.

15. In respect of interdependencies between service quality and cost we have sought to balance our more stringent assumptions on cost – appropriate to protect consumers and ensure better value for money air traffic services – with our strategic decision to provide strong support for the delivery of airspace modernisation. We have allowed all the capital expenditure NERL has requested for its role in airspace modernisation (£115 million) and excluded airspace modernisation-related operating expenditure (opex) (£35 million for the NERL Opex Flexibility Fund and £15 million for the Airspace Change Organising Group) from our efficiency proposals. We have also proposed costs increases in our own airspace-related costs to ensure we are equipped to fulfil own our airspace modernisation related duties and functions. In doing so, 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 of £10 million to be added to our costs for RP3 (see chapter 9 on uncertainty mechanisms). For both funds, expenditure will be subject to greater governance and, where not utilised, returned to airspace users in the future.

16. In determining our approach to capacity and flight efficiency targets, we have taken account of the discussion and agreement between NERL and their customers through their customer consultation programme. Considering NERL's good historical record, rather than propose more ambitious service targets, we propose only moderate improvements through RP3 while NERL seeks to deliver its part of airspace modernisation.

Summary of key draft proposals

17. Our draft proposals, 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. We provide below a high-level summary of our key proposals.

Safety

18. At RP2 we adopted an approach to safety consistent with the EU-wide performance targets. Historically NERL has performed well against these targets and in its business plan envisages it will continue to meet these targets, although the European Commission is yet to finalise its proposals for RP3. We support NERL's approach to these matters. See chapter 2.

Environment

19. Consistent with our approach to RP2, we propose to focus on a UK-specific horizontal and vertical flight efficiency indicator, the 3Di. Along with a technical adjustment to the metric to improve the accuracy of the data, we propose a modest performance improvement as against targeted RP2 performance. This will be supported with financial incentives broadly similar to those in RP2. See chapter 3.

Proposed 3Di targets

	RP2 (recalculated for model changes)					RP3				
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
NERL performance	29.5	29.7	29.0	28.7[1]	N/A					N/A
Par value[2]	29.1	28.6	28.3	27.5	27.1	26.8	26.5	26.2	25.9	25.6

Source: CAA

Notes: [1] The 2018 figure is based on data to the end of October 2018.

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

Capacity

20. We propose to adopt an air traffic flow management minutes of delay per flight target consistent with RP2 targeted performance, along with stronger financial incentives.

Proposed ATFM minutes of delay per flight target

ATFM delay minutes/flight[1]	RP2					RP3				
	2015	2016	2017	2018[2]	2019	2020	2021	2022	2023	2024
C2 target[3]	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
NERL performance	0.04	0.21	0.10	N/A	N/A					N/A

Source: CAA

Notes: [1] Figures presented are for average minutes of en route ATFM delay per flight attributable to air navigation services, with the codes C, R, S, T, M and P.

[2] NERL is forecast to exceed the target in 2018.

[3] We intend to apply modulation to the C2 target. These values are indicative and will be updated annually as appropriate, in accordance with the performance regulation.

21. Also consistent with our approach to RP2, we propose additional capacity performance targets and incentives, which focus on the time of day and duration of delays, as well as significant systems outages. See chapter 4.

Cost efficiency

22. Chapter 6 sets out our overall UK Determined Costs and Determined Unit Cost target. Our proposed UK cost efficiency target is an average reduction of Determined Unit Cost of 3.8% per year. This compares to the Performance Review Body's proposals to the European Commission for EU-wide cost efficiency target of an average 4.1% reduction of DUC per year.[1] Our proposed UK Determined Costs include c.£80 million of contingency support funds, the use of which will be dependent on appropriate governance and which if not utilised will be returned to airspace users in future reference periods.

Proposed UK's Determined Costs for RP3

2017 prices £millions	2019 Base	2020	2021	2022	2023	2024	CAGR 2019 to 2024
NERL	627.3	623.7	589.7	565.8	558.9	550.6	-2.6%
MET	25.5	29.0	27.7	28.5	31.0	30.6	3.7%
NSA& DFT	65.7	66.7	67.3	67.1	67.2	67.5	0.5%
UK	718.5	719.3	684.7	661.4	657.2	648.7	-2.0%

Source: CAA calculations

[1] The European Commission is yet to propose or agree EU-wide targets as required under the performance regulation. However, their advisers – the Performance Review Body – have published their recommendations to the Commission.

UK's Determined Unit Cost (DUC) target

2017 prices £millions	2019 Base	2020	2021	2022	2023	2024	CAGR 2019 to 2024
NERL	50.06	48.86	45.21	42.61	41.42	40.15	-4.3%
MET	2.03	2.27	2.12	2.14	2.30	2.23	1.9%
NSA& DFT	5.25	5.22	5.16	5.05	4.98	4.93	-1.3%
UK	57.34	56.35	52.50	49.80	48.70	47.31	-3.8%

Source: CAA calculations

23. NERL's UK en route activities account for the largest component of the UK Determined Costs, our proposals for which are set out in chapter 5 and summarised in the table below.

Summary of CAA proposed NERL efficiencies

RP3 Determined Costs for en route (£m, 2017 prices)	NERL business plan en route (£m)	CAA draft proposal en route (£m)	Difference (£m)	DUC impact (£)
Operating costs (excl. pensions)	2,156	2,084	-71	-1.13
- from staff and non-staff opex efficiency	-	-	-71	-1.13
Pension costs	416	368	-48	-0.75
- from DB deficit payment reduction	-	-	-36	-0.57
- from opex reduction	-	-	-12	-0.19
Regulatory depreciation	771	753	-18	-0.28
- from capital expenditure reduction	-	-	-11	-0.17
- from change to inflation forecasts	-	-	-7	-0.11
Regulatory return	277	149	-128	-2.02
Other income	-464	-499	-35	-0.56
- from MOD contract update	-	-	+13	+0.21
- from non-regulatory income increase	-	-	-49	-0.77
Total Determined Costs (£m, CSU-based)	3,155	2,855	-300	-4.74
CSUs ('000s)[1]	63,302	65,533	+2,231	
Determined Unit Cost per CSU (£)	49.85	43.57	-6.27	

Source: CAA calculations

Note: [1] Calculations based on NERL Chargeable Service Unit (CSU). The performance regulation uses Total Service Units (TSU) as the service unit metric. We therefore make a net neutral adjustment for Determined Costs to account for the difference between CSUs and TSU. This is consistent with our approach to RP1 and RP2.

24. NERL has forecast that its operating costs will increase by about 21% in the last two years of RP2. We accept that NERL needs this to deal with quality of service issues and progress future improvements but assume that it can achieve unit cost reductions of 2.3% per year from 2019. This is in line with its efficiency performance from 2007 to 2017. NERL has projected lower cost reductions of 2.2% from 2020. NERL has forecast an increase in operational ATCOs of 17% in RP3. We recognise that additional staff will be required to meet service levels and to deliver airspace modernisation and that there is a global shortage of ATCOs. However, we consider that NERL could set more ambitious staffing levels and still deliver the required service standards. Our proposal is for NERL's operating costs to be £71 million lower than NERL's projections in RP3 overall, but still represent an increase on RP2. This is within the range of £57 million to £133 million cumulative reductions suggested by our consultants Steer/Helios.

25. The £48 million reduction in pension costs is primarily driven by a reduction in defined benefit deficit recovery payments which amount to £36 million. This is mostly driven by the potential for lower levels of prudence at future valuations. The remaining £12 million reduction reflects overall operating cost efficiency assumptions being applied to NERL's forecasts of pension costs.

26. In relation to non-regulatory revenue, we have proposed an upward adjustment equal to half the reduction between NERL's non-regulatory revenue and its projections for the period of RP3. This is somewhat offset by a decrease in FMARS revenue – the resulting net adjustment is £35 million. The magnitude of the adjustment reflects our view that NERL has not demonstrated that it has taken all available steps to offset the decline in the non-regulatory revenue.

Summary of RP2 historical and CAA proposed RP3 costs by year

RP2 and RP3 Determined Costs for en route (£m, 2017 prices)	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
	Actuals	Actuals	Actuals	F'cast	F'cast	Draft	Draft	Draft	Draft	Draft
Operating Costs (excl. pensions)	348	360	350	386	422	421	414	426	419	404
Pension Costs	81	80	80	74	70	88	87	67	64	62
Regulatory Depreciation	193	193	186	173	165	185	152	133	137	146
Regulatory Return	69	64	59	56	56	27	30	31	31	30
Other Income	-106	-115	-115	-97	-94	-105	-99	-98	-98	-98
Total Determined Costs (£m, CSU)	585	583	560	592	620	616	583	559	553	545
CSUs ('000)	9,975	10,711	11,606	12,009	12,379	12,612	12,890	13,128	13,342	13,561
DUC per CSU (£)	58.61	54.39	48.25	49.30	50.06	48.86	45.21	42.61	41.42	40.15

Source: CAA

27. In addition to our main proposals, we include proposals in respect of NERL's Oceanic service in chapter 11.

28. In developing our proposed efficiencies for NERL, we have considered the impact of plausible downside scenarios, but have not identified issues in respect of our duty to ensure that NERL does not find it unduly difficult to finance their licensed activities. See chapter 7.

Next steps

29. We welcome comments from all stakeholders on any matters relating to our draft performance plan proposals. Consultation on our proposals closes on 12 April 2019. To support the consultation process, stakeholders are invited to a multilateral stakeholder consultation meeting on 11 March 2019.

30. Through spring and early summer 2019 we will continue to engage with stakeholders on detailed governance arrangements. Subject to stakeholder feedback on our proposals, EU-wide target developments and Brexit developments, we will update our proposals, before submitting them to the Department for Transport in time for adoption as the UK draft performance plan and submission to the European Commission by 30 September 2019. We will also consult on related modifications to the NERL licence ahead of a CAA decision before the end of the year. RP3 starts on 1 January 2020.

31. Further information on consultation arrangements and next steps can be found in chapter 1.

CHAPTER 1

Introduction and background

Purpose of this document

1.1 This document sets out for consultation, proposals for the UK draft performance plan for Reference Period 3 of the EU's Single European Sky (SES) performance scheme for air navigation services (ANS). This includes the targets and incentives for NATS (En Route) plc – referred to as 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 These proposals have been prepared by the UK Civil Aviation Authority (CAA), in our roles as the UK national supervisory authority (NSA) under the SES legislation and economic regulator for air traffic services under the Transport Act.

Views invited

1.3 Comments and responses to this consultation should be sent to economicregulation@caa.co.uk by noon on Friday 12 April 2019. We cannot commit to take into account representations received after this date.

1.4 We expect to publish the responses we receive on our website as soon as practicable after the period for representations expires. Any material that is regarded as confidential should be clearly marked as such and included in a separate annex. Please note that we have powers and duties with respect to disclosure of information under Schedule 9 of the Transport Act and the Freedom of Information Act 2000 and it may be necessary to disclose information consistent with these requirements.

1.5 A stakeholder meeting to support the consultation process will be held in London on 11 March 2019. Stakeholders wishing to attend the meeting should email economicregulation@caa.co.uk by 1 March 2019.

1.6 Any questions relating to this document should be sent to Matt Claydon at matt.claydon@caa.co.uk.

Regulatory framework

The performance and charging scheme

1.7 The SES performance and charging scheme is set out in EU legislation and is designed to improve the performance of ANS in four key performance areas (KPAs):

- Safety
- Capacity
- Environment
- Cost efficiency

1.8 Detailed requirements of the performance scheme are contained in the RP3 performance and charging regulation (the 'performance regulation'),[2] the main features of which are summarised below.

1.9 Member States must adopt performance plans in respect of ANS providers covering a five-year reference period. The current regulatory cycle, Reference Period 2 (RP2), comes to an end on 31 December 2019. Reference Period 3 (RP3) will run from 1 January 2020 to 31 December 2024.

1.10 The European Commission (the Commission) must set EU-wide targets in each KPA, based on Key Performance Indicators (KPIs), taking account of performance achieved in the previous reference period and inputs provided by their advisers the Performance Review Body (PRB), the SES Network Manager (NM) and NSAs.

1.11 The performance plans submitted by Member States must contain performance targets for each KPI set at national level that are consistent with EU-wide targets that are set by the Commission.

1.12 Performance targets in the KPAs of capacity, environment and cost efficiency should be subject to effective financial incentive schemes to encourage better performance. There are no financial incentives on safety due to its overriding importance.

1.13 NSAs must consult on performance plans to ensure the views of stakeholders are taken into account in establishing performance plans and targets (this document forms the basis for that consultation in respect of the UK's performance plan).

[2] Revised regulation agreed by Member States on 17 December 2018, yet to be formally adopted by the Commission and published in the Official Journal of the European Union.

The Transport Act 2000

1.14 The Transport Act gives the CAA a primary duty to exercise its functions so as to maintain a high standard of safety in the provision of air traffic services.

1.15 In exercising its functions the CAA must do so in a manner it thinks best calculated:

- to further the interests of operators and owners of aircraft, owners and managers of aerodromes, persons travelling in aircraft and persons with rights in property carried in them;
- to promote efficiency and economy on the part of licence holders;
- to secure that licence holders will not find it unduly difficult to finance activities authorised by their licences;
- to take account of any international obligations of the UK notified to the CAA by the Secretary of State (whatever the time or purpose of the notification); and
- to take account of any guidance on environmental objectives given to the CAA by the Secretary of State.

1.16 Our approach to economic regulation includes price controls where we specify the maximum amounts that NERL can charge its customers for its regulated services. These amounts depend on how it performs against performance targets. These price controls are given effect through conditions in the NERL licence.

1.17 The Transport Act also places duties on NERL. As the licence holder it:

- must secure that a safe system for the provision of authorised air traffic services in respect of a licensed area is provided, developed and maintained;
- must take all reasonable steps to secure that the system is also efficient and coordinated;
- must take all reasonable steps to secure that the demand for authorised air traffic services in respect of a licensed area is met;
- must have regard, in providing, developing and maintaining the system, to the demands which are likely to be placed on it in the future.

1.18 We may modify the conditions of the licence, if NERL consents. If, in due course, NERL accepts our performance plan and the associated licence modifications that give effect to this, 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. If NERL does not consent to our licence

modifications, we may make a reference to the Consumers and Markets Authority (CMA) to investigate and report on our proposed modifications.

Brexit

1.19 At the time of preparation of our draft performance plan proposals for consultation, it is not clear what the nature of the UK's future relationship with the EU will be. Our approach and proposals are based on the SES performance framework applying to the UK on the 1 January 2020. If no future arrangements are put in place 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 expect to produce a price control and service quality targets that go towards achieving the strategic outcomes established in CAP 1511,[3] and these need to be in place by 1 January 2020. If a 'no-deal' Brexit were to occur we would consider the implications of this in making our final proposals later in 2019.

Scope of the consultation

1.20 This document covers our proposals for consultation on the draft UK performance plan and Oceanic price control for RP3.

1.21 The Oceanic price control covers the air traffic services NERL provides to aircraft crossing the North Atlantic. This service 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. Chapter 11 sets out proposals for the Oceanic price control and consults on our draft proposals for the Oceanic control.

1.22 The draft performance plan covers:

- NERL's en route ANS in the Scottish and London Flight Information and Upper Information Regions (FIR/UIR);
- NERL's combined approach ANS for certain London airports;[4]
- the costs of the UK's contribution to Eurocontrol – referred to as DfT costs in the draft performance plan;

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

[4] See chapter 8 on the London Approach service.

- the costs of aviation services provided by the Met Office;
- the costs of the CAA's airspace policy and regulation activities; and
- terminal ANS performance requirements.[5]

1.23 Under the performance regulation, it is open to Member States to adopt plans at the Functional Airspace Block (FAB) or national level. We propose that this draft performance plan is adopted at the national level. Brexit implications aside, there are material differences in terms of size, scope and complexity of UK and Irish airspace and ANS. The UK and Ireland, therefore, agree that national plans will provide a more transparent view of respective performance over RP3.

1.24 Furthermore, the complexity of the UK airspace and air navigation arrangements mean that it is not appropriate to apply the simplified charging scheme set out in Article 34 of the performance regulation.

UK context and assumptions

Airspace modernisation

1.25 In addition to our European and domestic statutory duties, the key strategic consideration in developing our proposals for the draft performance plan for RP3 is airspace modernisation. Airspace is a crucial part of the UK's national infrastructure. It needs to be maintained and enhanced to provide more choice and value for consumers, through the capacity for airlines to add new flights, reduced flight delays and enhanced global connections that can help boost the UK economy, while continuing to improve safety standards. Unlocking the benefits of modernisation can make journeys faster and more environmentally friendly. Better airspace design can help with the management of noise impacts for communities and improve access for other airspace users, including the military, for whom airspace is a key resource.

1.26 Government has set out its support and objectives for the modernisation of UK airspace in its Green Paper[6] published in December 2018 in preparation for its forthcoming Aviation Strategy. Prior to this, 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

[5] See chapter 10 on terminal ANS.

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

of UK airspace for air navigation up to 2040, including for the modernisation of the use of such airspace.

1.27 In December 2018, we published our UK Airspace Modernisation Strategy (AMS),[7] setting out the detailed initiatives that industry must deliver to achieve the objectives envisaged in current government policy. In our guidance for NERL in preparing its business plan for RP3,[8] 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.

Traffic assumptions

1.28 Our draft proposals are based on the STATFOR[9] October 2018 base case medium-term forecasts for en route traffic and are presented in Table 1.1. We note that STATFOR is preparing to update its medium-term forecasts in February 2019. As these were not available at the time of development of our proposals we are unable to take them into account prior to publication. However, we will consider the updated forecasts alongside stakeholder responses to this consultation.

1.29 The average annual growth rate for UK flights is forecast to be 1.5% in RP3, compared to 2.8% in RP2. For TSU, the average annual growth rate for UK flights is forecast to be 1.8% in RP3, compared to 4.7% in RP2.

Table 1.1: Traffic forecast

	RP2					RP3				
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Actual	Actual	Actual	F'cast	F'cast	F'cast	F'cast	F'cast	F'cast	F'cast
Overall UK flights (000)	2,322	2,449	2,534	2,553	2,605	2,649	2,693	2,735	2,772	2,809
TSU (000)	10,154	10,875	11,768	12,157	12,531	12,766	13,043	13,280	13,494	13,713

Source: STATFOR Seven-Year Forecast October 2018

[7] CAP 1711 - Airspace Modernisation Strategy (December 2018)

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

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

Comparison with NERL's traffic forecast

1.30 NERL's RP3 business plan uses traffic forecasts that NERL developed itself using a combination of:

- a passenger allocation model for scheduled, chartered and low-cost operations; and
- statistical techniques for overflights, cargo, business flights and military operations.

1.31 The main difference between NERL's forecasting methodology and STATFOR's is that NERL's model re-allocates passengers to nearby airports when a particular airport is capacity-constrained. The STATFOR model instead assumes that constrained-off passengers would not fly. The NERL approach is *theoretically* preferable for the UK compared to the STATFOR approach, which is more suited to continental Europe where rail or road travel may be a viable alternative to flying.

1.32 Table 1.2 compares the NERL and STATFOR forecasts. In a capacity-constrained environment, as expected for the UK in RP3, the NERL model would be expected to produce higher traffic forecasts, all else being equal. In practice, however, by the end of RP3 STATFOR's forecast for TSU is 2.6% higher than NERL's business plan. NERL states that this is because:

- NERL forecasts 0.5% growth in flights in 2019 compared to 2.0% forecast by STATFOR. This is despite the fact that both forecasts are based on GDP[10] growth from the July 2018 Oxford Economics[11] forecast (OEF) central scenario.
- STATFOR's forecast uses the most recent northerly position of the jet stream, whereas NERL's forecast uses a rolling 5-year average position of the jet stream.

Table 1.2: Comparison of NERL and STATFOR traffic forecast

	Source	2018	2019	2020	2021	2022	2023	2024	CAGR 2018-24
Overall UK flights (000)	STATFOR	2,553	2,605	2,649	2,693	2,735	2,772	2,809	1.6%
	NERL RP3 business plan	2,533	2,546	2,597	2,653	2,713	2,769	2,802	1.7%
TSU	STATFOR	12,157	12,531	12,766	13,043	13,280	13,494	13,713	2.0%

[10] Gross Domestic Product (GDP) assumptions are a key determinant of the traffic forecasts, as they characterise the expected level of economic activity in the UK and destination countries.

[11] Oxford Economics Ltd, is an established UK economic research organisation.

(000)	NERL RP3 business plan	12,085	12,094	12,220	12,498	12,823	13,133	13,366	1.7%

Source: NERL and STATFOR

1.33 Both NERL's and Eurocontrol's STATFOR traffic forecasts make allowances for adverse impacts on traffic arising from Brexit, driven by uncertainty around its impact on economic growth. 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. If the variance triggers alert mechanism thresholds, NSAs may review the performance plans and, where appropriate, propose new targets. Traffic risk sharing is addressed in chapter 9 on uncertainty mechanisms.

1.34 We understand that NERL continues to engage with STATFOR regarding the difference between their forecasts and that this difference may narrow in the updated forecasts. We expect to update the traffic forecasts we use for our final proposals to take account of stakeholder feedback and updates to forecasts in 2019. It is our preference to use the STATFOR forecasts given the official role and greater independence of STATFOR, but we will consider responses to the consultation before making a final decision.

Process

Process to date

1.35 Following publication of a discussion document on our strategic outcomes for NERL for RP3[12], we consulted on[13] and then published business plan guidance[14] to NERL in January 2018, setting out our expectations for NERL's RP3 business plan and consultation with its customers.

1.36 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

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

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

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

conclusions.[15] NERL published a revised RP3 business plan at the end of October 2018.[16]

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

- Cost of capital – Europe Economics
- Operating and capital costs – Steer/Helios
- Pensions – the Government Actuary's Department (GAD)
- Cost allocation and non-regulated revenue – Cambridge Economic Policy Associates (CEPA)
- Financial model assurance – Grant Thornton
- Review of Service and Investment Plan (SIP) process – Chase Partners

1.38 In addition to the NERL-focussed process, the Met Office has developed and consulted on its RP3 proposals, which was supported by a stakeholder consultation meeting in September 2018.[17]

1.39 As previously stated, a key strategic consideration for the development of our RP3 proposals 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[18] in December 2018. We have taken account of the development of the strategy as we have developed our RP3 proposals.

Next steps to finalise RP3 performance plan

1.40 We will hold a stakeholder consultation meeting in London on 11 March 2019. This will provide stakeholders with the opportunity to set out their views and priorities on our proposals. Stakeholders wishing to attend the workshop should email economicregulation@caa.co.uk by 1 March 2019.

1.41 Written responses to the consultation should be submitted to economicregulation@caa.co.uk by noon on 12 April 2019.

[15] RP3 Customer Consultation Working Group Report of the Co-Chairs (October 2018).

[16] NERL RP3 business plan 2020-2024 (October 2018) and appendices.

[17] https://www.metoffice.gov.uk/aviation/our-responsibilities-to-aviation

[18] CAP 1711 – Airspace Modernisation Strategy (December 2018)

1.42 The process beyond stakeholder consultation will be informed by the UK's future relationship with the EU. The steps below are based on the UK continuing to be subject to the SES performance regulation.

1.43 Following consideration of stakeholder consultation responses, relevant updated forecasts and taking account of EU-wide target developments (and adoption), we will make final proposals on a draft UK performance plan to the DfT for adoption and submission to the Commission by 30 September 2019.

1.44 By the end of October 2019, the Commission will conduct a verification process on Member States' draft performance plans. If no key information has been omitted, the draft performance plans submitted by Member States will come into effect on 1 January 2020.

1.45 The Commission will undertake a formal assessment of performance plans and targets, for consistency with the regulation and EU-wide targets. If any subsequent changes are required, they will be applied retrospectively. If the Commission's assessment is positive, a formal decision will be adopted formalising the performance plan and targets by the end of February 2020.

1.46 If the UK were to cease to be subject to EU legislation before our final proposals, then economic regulation of NERL would revert to the Transport Act and the EU-wide targets and processes will not be directly relevant to our decisions.

EU targets

1.47 The performance regulation requires that national targets are consistent with EU-wide targets. The performance regulation agreed for RP3 requires that EU-wide targets must be adopted by the Commission no later than the end of May 2019. Whilst the Commission intends to bring forward agreement of the EU-wide targets, at the time of preparing our draft performance plan proposals, the EU-wide targets were not available.

1.48 Notwithstanding, in October 2018, following stakeholder consultation in summer 2018, the PRB published its EU-wider target proposals to the Commission. We have therefore used the PRB's proposals to the Commission on EU-wide targets where possible, to provide context for our own proposals. Stakeholders should note that the Commission has not provided any formal or informal views on the PRB proposals.

1.49 The Commission has indicated its intent to begin consultation with Member States on proposed EU-wide targets in late March 2019. As the EU-wide target proposals develop and once they are formally agreed, we will review our latest proposals and where appropriate conduct proportionate additional stakeholder engagement and consultation.

NERL licence modifications

1.50 Whether under the performance scheme or under the Transport Act, there will be modifications required to the NERL licence to implement the relevant components of the UK targets and financial incentives.

1.51 We also expect to make additional licence modifications to implement our proposals in respect of capital expenditure and airspace modernisation governance and accountability. We will engage with stakeholders on these proposals in due course and ahead of the statutory consultation required to modify the NERL licence, which we plan to conduct in the last quarter of 2019.

Structure of this document

1.52 The remainder of this document is structured as follows:

- Chapters 2, 3 and 4 set out our proposals for NERL's outputs in respect of Safety, Environment and Capacity, including – where appropriate – financial incentives;
- Chapter 5 addresses our efficiency proposals for NERL's en route Determined Costs and chapter 6 sets out our proposed UK cost efficiency target, as well as DfT, MET and CAA Determined Costs;
- Chapter 7 addresses key NERL building blocks and our assessment of financeability;
- Chapter 8 sets out our proposals for the London Approach service, including a proposal to bring Biggin Hill Airport into 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 focuses on our proposals for the Oceanic price control.

1.53 Appendices providing detailed supporting information, are provided in a separate document – CAP 1758A.

CHAPTER 2

Safety

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 The CAA has a primary duty under the Transport Act to exercise its functions so as to maintain a high standard of safety in the provision of air traffic services. 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.

2.3 This chapter:

- summarises the approach to aviation safety in the UK; and
- sets out the requirements under the performance regulation regarding safety, including the KPI against which NERL's safety performance will be monitored, and our draft proposals for the target for this KPI.

UK approach to safety

2.4 The UK's State Safety Programme (SSP)[19] 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, 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

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

- 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 in March 2019, 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 at national level against one KPI, Effectiveness of Safety Management (EoSM):[20] The EoSM KPI for air navigation service providers (ANSPs) is measured by the level of implementation of the following management objectives:

a. safety policy and objectives;

b. safety risk management;

c. safety assurance;

d. safety promotion; and

e. safety culture.

2.9 EASA Acceptable Means of Compliance and Guidance Material for EoSM for RP3 have yet to be developed. Based on the approach to RP2[21], achievement of the (safety) management objectives is measured by verified responses to questionnaires. For each question, the response should indicate the level of implementation, characterising the level of performance of the respective organisation. Responses to each question are then aggregated under the above management objectives to generate a level for each objective. Under RP2, the levels and effectiveness scores were:

[20] Annex I, section 2, 1.1 of the performance regulation.

[21] EASA, Acceptable Means of Compliance and Guidance Material for the implementation and measurement of Safety (Key) Performance Indicators (S(K)PIs) (ATM performance IR) Issues 2 (December 2014).

- Level A which is defined as ‘Initiating’ — processes are usually ad hoc and chaotic;
- Level B which is defined as ‘Planning/Initial Implementation’ — activities, processes and services are managed;
- Level C which is defined as ‘Implementing’ — defined and standard processes are used for managing;
- Level D which is defined as ‘Managing & Measuring’ — objectives are used to manage processes and performance is measured; and
- Level E which is defined as ‘Continuous Improvement’ — continuous improvement of processes and process performance.

2.10 There are five safety performance indicators that will be monitored during RP3.

a. The rate of runway incursions at airports located in a Member State.

b. The rate of separation minima infringements within the airspace f all controlling air traffic services unit in a Member State.

c. 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.

d. 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.

e. Where applicable, the use of automated safety data recording systems by ANSPs as a component of their safety risk management framework.

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

CAA proposal

2.12 Historically NERL has performed well in the maturity of its safety management systems. The RP2 EU-wide target is for ANSPs to reach Level C for safety culture and Level D for all other management objectives by the end of 2019. NERL reached level D for safety in 2015 and level D for all management objectives since 2016. It has maintained level D performance since, well ahead of the 2019 EU-wide target.

2.13 We understand that EASA intends to modify the approach for RP3 and may amend the levels and effectiveness scores. However, given NERL's strong historical performance, we expect them to achieve the EU-wide target.

2.14 Therefore, subject to confirmation of RP3 EU-wide targets, our current intention is to propose a UK target consistent with the EU-wide targets. This is also the approach set out in NERL's RP3 business plan.

2.15 NERL's RP3 business plan notes it will also set internal aspirational safety targets at a more detailed level. We support this initiative 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 SIP process and the Condition 11 service standards reporting requirements under its licence.

Consultation questions

2.16 We welcome comments on any issues raised and our proposed approach to safety.

CHAPTER 3

Environment

Introduction

3.1 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.

3.2 The performance scheme assesses environmental performance in terms of flight efficiency, as a proxy for carbon emissions. In the short-term, flight efficiency can be improved 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 to provide more efficient flight trajectories.

3.3 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.

3.4 This chapter:

- sets out the requirements under the performance regulation regarding the environment, including the base KPI against which NERL's environmental performance will be monitored;
- sets out our proposals for the additional 3Di metric and the targets for NERL's environmental performance in RP3;
- outlines the financial incentive we propose to apply to NERL's 3Di environmental performance;
- describes the other environmental performance indicators that will be monitored; and
- summarises what we said in our business plan guidance on NERL taking account of the impact of noise in carrying out its activities and how NERL has responded to these challenges in its business plan.

SES requirements

3.5 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;
- 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.

3.6 We propose to continue to engage with the PRB and the Commission on the development of UK reference values before setting a target for KEA. We do not propose to apply a financial incentive on KEA but will do so on the 3Di metric (discussed below) as the latter is more suited to assessing flight efficiency in UK airspace and is preferred by airspace users over KEA. We will continue to report annually to the Commission on KEA performance.

Additional UK indicator – 3Di

3.7 The performance regulation allows NSAs (including the CAA) to implement additional environmental KPIs.

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

3.9 We consider that NERL's 3Di metric provides a more comprehensive view of environmental performance in the UK, given the complex interaction of ascending and descending traffic in our congested airspace.

3.10 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 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 closer to efficient routes NERL provides, the lower their three-dimensional inefficiency (3Di) score.

NERL's 3Di performance in RP2

3.11 The 3Di metric was introduced in RP1 and refined for RP2. It is calculated using a linear regression model that incorporates flight path inefficiencies in both the vertical and horizontal dimensions. The modelling is two-stage and is based on a sample of flights for which the estimated fuel inefficiency due to flight path is regressed upon the various drivers of flight path inefficiency. The resulting coefficients are then applied to flight path inefficiencies and a 3Di score is estimated for each UK flight in the year. The annual average of these scores provides a measure against which a financial incentive is applied.

3.12 Table 3.1 sets out the 3Di target for each year of RP2, including the deadband (with lower and upper bounds) beyond which NERL earns a financial advantage (bonus) or disadvantage (penalty),[22] and NERL's performance to date. The deadband around the target is designed to allow for statistical variation in the metric that may not be due to NERL's performance. So far in RP2 NERL has underperformed its target but has remained within the deadband and so it has not incurred any penalties.

Table 3.1: NERL's 3Di performance in RP2

	2015	2016	2017	2018	2019
Par value	29.7	29.3	28.9	28.1	27.7
Annual change in par value	N/A	-1.3%	-1.4%	-2.4%	-1.4%
Lower bound of deadband	28.2	27.8	27.5	26.7	26.3
Upper bound of deadband	31.2	30.8	30.3	29.5	29.1
NERL's performance	**30.1**	**30.3**	**29.6**	**29.3***	**N/A**

Source: CAA

* The 2018 figure is based on data to the end of October 2018.

Approach to calculating 3Di in RP3

3.13 NERL's RP3 business plan proposes 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;

[22] The performance regulation refers to bonuses and penalties as 'financial advantage' and 'financial disadvantage' respectively. For general clarity we continue to use the language of the previous performance and charging regulation which refers to bonus and penalty.

- 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.

3.14 We propose that only the first of these proposed adjustments should be made to the reported 3Di metric. Non-revenue flights of the types listed are a small proportion of overall flights in a given year but may have a disproportionately large impact on the 3Di score. Since those flights do not typically seek to maximise flight efficiency, it is appropriate to exclude them from the metric and incentive. Based on data from NERL, it is estimated that excluding these types of flights would result in a downward adjustment of the 3Di score of around 0.6.

3.15 NERL proposes the vertical cut-off as a way of setting a demarcation line between prioritising noise impact (which NERL considers is the responsibility of airports) and prioritising flight efficiency. However, we consider that 3Di already implicitly captures that trade-off through its vertical component. Additionally, the proposed vertical cut-off would result in the flight efficiency benefits of airspace redesign not being reflected fully in 3Di. We therefore propose that a vertical cut-off should not be introduced.

3.16 NERL's rationale for the remaining proposed adjustments is that there are a number of factors that are beyond NERL's direct control, and as such should be removed from the metric. Our view is that the proposed adjustments may sanitise the 3Di metric of any real insight 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. For example, if NERL can exclude certain days from the metric, its 3Di score could improve in a year in which users experienced significant flight inefficiencies as a result of actions NERL has taken in response to adverse weather. 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.

Management of changes to the calculation of 3Di

3.17 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.

3.18 Any further measurement or method changes NERL wishes to make to the model in RP3 will not be incorporated into the regulatory reporting. This will maintain the consistency of the regulatory time series and ensure NERL is not penalised or rewarded for changes in the 3Di score that are not due to performance improvements.

3.19 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 appraised of such changes prior to implementation.

Annual review of the 3Di model

3.20 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.

3.21 NERL uses a sample of at least 50,000 flights in the year to re-estimate the 3Di model according to a linear regression with the same terms that were used to set the RP3 targets, and then uses this revised model to calculate the test 3Di score for the year. If the test 3Di score is more than ±8% from the score derived using the base model, the test will be deemed to have failed.

3.22 The financial incentive on 3Di (discussed below) 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. Consecutive failures could imply that there has been a step-change in NERL's operating environment (for example, the amount of airspace managed or volume of traffic) such that the regression coefficients and, by extension, the target derived for RP3 are no longer appropriate.

CAA proposals

3.23 Taking into account the above adjustments, we propose the following targets and deadbands for the 3Di metric in RP3:

Table 3.2: CAA proposed 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	28.7[1]	N/A	N/A				
Par value[2]	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					25.5	25.2	24.9	24.6	24.3
Upper bound of deadband						28.1	27.8	27.5	27.2	26.9

Source: CAA

Notes: [1] The 2018 figure is based on data to the end of October 2018.

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

3.24 Our proposal involves a 1.0% improvement in 3Di target values relative to the previous year.

3.25 Our proposals are based on:

- a review of NERL's 3Di performance in RP2 so far, with the 3Di metric recalculated to exclude non-revenue flights[23];
- the traffic forecast set out in chapter 1 and the operational improvements that are set out in NERL's RP3 business plan and are expected to improve flight efficiency, including airspace modernisation and the deployment of SES ATM Research (SESAR) technologies.

3.26 In summary our proposal involves a 1.0% per annum improvement in 3Di target values relative to the previous year. In terms of the 3Di score, this translates to approximately a 0.3 reduction in the par value annually. We also propose 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 will be reached.

[23] 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.

Financial Incentives on the 3Di KPI

3.27 Member States may set a financial incentive for KEA and additional environmental KPIs.[24] The regulation caps the incentive set in any year at 2% of Determined Costs for bonuses and 4% of Determined Costs for penalties. Any incentive on environmental measures can be applied in addition to the incentive schemes on capacity and cost efficiency.

3.28 We propose that the 3Di incentive is capped at ±1% of Determined Costs. This is broadly consistent with the approach in RP2, albeit the value will vary slightly as the RP2 incentive is currently based on a fixed percentage of revenue, rather than Determined Costs.

3.29 Calculation of the 3Di incentive rate is set out in Appendix E.

Other Performance Indicators

3.30 The performance regulation also requires the monitoring of a number of other performance indicators on the environment:[25]

a. 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;

b. horizontal en route flight efficiency of the shortest constrained trajectory;

c. additional time in the taxi-out phase;

d. additional time in terminal airspace; and

e. share of arrivals applying Continuous Descent Operations (CDO).

3.31 The performance regulation 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 7000 feet. Whereas, the UK Arrivals Code of Practice[26] establishes 5,500 feet above aerodrome level for monitoring of CDOs. For RP3, we propose to

[24] Article 11(4) of the performance regulation.

[25] Annex I, section 2, 2.2 of the performance regulation.

[26] *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).

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 6000 feet transition altitude or routine holding at flight level 70 (FL70) in the London airport holding stacks. We would welcome stakeholders' views on the appropriate CDO monitoring reference height.

Noise

3.32 There can be 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.

3.33 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.[27] 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.

3.34 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.

3.35 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 draft performance plan, we note that NERL has been asked to reflect noise reduction in our joint (with DfT) commission for an airspace change masterplan. We intend to bring forward modifications to NERL's licence that will set out their obligations with respect to

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

airspace modernisation and noise, including the production of the masterplan through the new Airspace Change Organising Group (ACOG).

Consultation questions

3.36 We welcome comments on any of the issues raised in this chapter and in particular on our proposals for changes to the calculation of the 3Di metric, the revised 3Di targets and financial incentives.

3.37 We also welcome comments on our proposed approach to defining the RP3 CDO monitoring reference height.

CHAPTER 4

Capacity

Introduction

4.1 Capacity is measured by delays incurred by aircraft using en route ANS. Airspace users expect a level of service quality to be delivered by NERL in exchange for the charges they incur. 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. During RP3, NERL is expected to deliver a significant programme of technology upgrades and support to airspace modernisation. Any changes to its operational systems will require very careful planning and mitigations to ensure safety and service continuity.

4.2 It is NERL's responsibility to deliver a quality service in line with airspace users' expectations. The CCWG Co-Chairs' Report notes that airlines generally support NERL's proposal of maintaining the capacity targets for RP3 at the same levels as for RP2, with NERL providing more transparent and robust information on the impact on costs of service improvements.

4.3 We have proposed capacity targets that reflect either similar levels of delay as the equivalent targets in RP2 or reflect some modest improvement in the targets.

4.4 Our expectation is that NERL's capacity performance will improve in RP3, but there will be more 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. Our proposed 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.

4.5 This chapter:

- sets out the requirements under the performance regulation regarding en route capacity;
- summarises the KPIs against which NERL's capacity performance will be monitored; and
- outlines our proposed financial incentives to drive NERL's capacity performance.

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

4.7 We discuss capacity and resilience with regard to NERL's London Approach service in chapter 8.

SES requirements and capacity KPIs

4.8 The mandated capacity KPI is the average minutes of en route air traffic flow management (ATFM) delay per flight attributable to ANS, calculated as follows:[28]

a. the en route ATFM delay is the delay calculated by the NM, expressed as the difference between the estimated take-off time and the calculated take-off time allocated by the NM;

b. the indicator covers all IFR flights traversing the local airspace and all ATFM delay causes, excluding exceptional events; and

c. the indicator is calculated on the basis of calendar years for each year of the reference period.

4.9 We refer to this KPI as C1, the target for which is set at the national level.[29]

4.10 The performance regulation requires that Member States establish financial incentives for ANSP capacity performance. These incentives should consist of financial advantages (bonuses) for exceeding targets, and financial disadvantages (penalties) for failing to meet target levels of performance. Bonuses and penalties should be added to or deducted from the adopted Determined Costs for each ANSP.

4.11 The C1 metric is based on all causes of ATFM delay (including weather delay). However, in the setting of financial incentives the performance regulation allows for adjustments to be made to C1 to account for only ANSP-attributable delay. Consistent with our approach to RP2, we refer to this adjusted metric as C2.

4.12 The maximum amount of bonus for the mandatory capacity incentive in any given year cannot exceed 2% of the Determined Costs in that year. 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.

[28] Annex I, section 1, 3.1 of the performance regulation.

[29] 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.

4.13 We also propose two further capacity KPIs designed to focus on elements of delay performance that users regard as particularly important: the time and duration of delay (referred to as our C3 metric) and significant delays above a threshold (referred to as our C4 metric).

C1 proposals

4.14 The EU-wide capacity target is expected to be based on reference values developed by the NM. We will engage with the PRB and the Commission on the development of UK reference values, and consider responses to these draft proposals, before setting the C1 target in our final proposals.

4.15 During its customer consultation, NERL and airline customers agreed that NERL's proposed RP3 C1 target (on all causes of delay) – to maintain the RP2 average level of ATFM delay of 0.23 minutes per flight – was an appropriate level of service.

4.16 Taking into account the increasing traffic, the significant programme of work for airspace modernisation and the support of airspace users for NERL's proposed RP3 C1 target, subject to further engagement with the PRB and the Commission we consider that NERL's proposal is reasonable.

4.17 Direct comparison of NERL's proposed C1 target to the target that has initially been suggested by the PRB is not made here, as the PRB only set out a simulated target for the UK-Ireland FAB. However, we note that the PRB simulated a less demanding target for RP3 than is in place for RP2.

C2 proposals

4.18 For the application of financial incentives we can make adjustments to C1 to reflect only ANSP-attributable delays,[30] referred to as the C2 metric (as used in RP2). The performance regulation allows the C2 target value to be modulated for variations in traffic. The objective of these measures is to ensure that ANSPs are not unduly rewarded or penalised for reductions or increases in delay that are not due to ANSP performance.

4.19 The detailed requirements and application of these adjustments and modulation mechanisms are set out in Appendix E.

[30] 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.

4.20 During the NERL customer consultation process, NERL and airspace users agreed that NERL should continue to target C2 performance at the same level as RP2 (with the average level of ANSP-attributable ATFM delay of 0.18 minutes per flight).

4.21 Our analysis of NERL's historical delay performance suggests 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, we consider NERL's proposal reasonable.

4.22 Table 4.1 summarises the C2 target for RP2 alongside NERL's actual performance so far in RP2, and sets out our C2 target proposals for RP3

Table 4.1: Proposed RP3 C2 target values

ATFM delay minutes/flight[1]	RP2					RP3				
	2015	2016	2017	2018[2]	2019	2020	2021	2022	2023	2024
C2 target[3]	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
NERL performance	0.04	0.21	0.10	N/A	N/A					N/A

Source: CAA

Notes: [1] 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.

[2] NERL is forecast to exceed the target in 2018.

[3] We intend to apply modulation to the C2 target. These values are indicative and will be updated annually as appropriate, in accordance with the performance regulation.

C2 financial incentive

4.23 Consistent with our approach to RP2 and the performance regulation we intend to apply a financial incentive to NERL's C2 target in RP3. We will apply a deadband around the C2 target value so that incentives are not triggered by minor variations in delay performance. The operation of the deadband is explained in detail in Appendix E.

4.24 Against the indicative C2 target value set out above, NERL will not be eligible to start earning a bonus until C2 performance is 0.15mins/flight or better and will be subject to a penalty if C2 performance is 0.21mins/flight or worse.

4.25 The performance regulation increases the maximum allowed strength of the C2 financial incentives compared to that available in RP2, and removes the cap on penalties.

4.26 We propose only a moderate increase in the financial incentives, bearing in mind the possible impacts on NERL and airspace users. We also note and propose:

- the calculation of the cap in RP3 is based on a percentage of Determined Costs, rather than revenue, providing greater certainty over the value at stake;
- the deadbands around the target value will be symmetric unlike the approach in RP2. The proposed RP3 deadband of ±15% means that bonuses will be triggered sooner than in RP2 (and maximum bonus will also be reached sooner); 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.

4.27 Our proposed C2 incentive value maxima are presented the below.

Table 4.2 CAA proposed value of C2 incentive

	RP2 (% of revenue)		RP3 (% of Determined Costs) RP3 (% of Determined Costs)	
Term	**Maximum bonus**	**Maximum penalty**	**Maximum bonus**	**Maximum penalty**
C2	0.25%	0.25%	0.5%	0.75%

Source: CAA

4.28 This would imply a maximum C2 bonus of £2.8 million and a maximum penalty of £4.1 million, based on our draft proposals for NERL's Determined Costs in 2024.

Additional capacity metrics – C3 and C4

4.29 In addition to C2, the performance regulation allows for additional capacity measures to be implemented where these encourage ANSPs to achieve a high level of performance.

4.30 NERL has been subject to two additional capacity measures in RP2.

a. Impact Score, which places greater weight on long delays and delays in the morning and the evening peaks (C3).

b. Daily excess delay score, which is based on weighted delays exceeding pre-determined thresholds on a daily basis (C4).

4.31 The performance regulation states that 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 the determined cost and a maximum penalty value of 4% of the determined cost. This is an increase on the parameters permitted in RP2.

4.32 For RP3, we proposed that NERL will continue to be subject to targets and financial incentives for these two capacity measures in addition to C2, with some modest changes to the target and incentive values. We propose a moderate increase to the strength of C3 and C4 incentives, which we understand to carry most value to users, based on feedback in previous price controls and the CCWG Co-Chairs' Report. We also propose 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.

C3 target and incentive

4.33 The C3 target is expressed as an Impact Score, which places greater weight on long delays and delays in the morning and the evening peaks.

4.34 Users support the continued use of C3 as it reflects the greater impact on their operations of long delays and of delays early in the day, which have a knock-on effect on the punctuality of subsequent flights.

4.35 The table below sets out our proposed RP3 C3 targets and presents NERL's performance against the C3 metric in RP2 to date.

4.36 An explanation of how the proposed C3 measure is derived for RP3 is set out in Appendix E.

Table 4.3: Proposed target for C3

Impact score	RP2					RP3				
	2015	2016	2017	2018[1]	2019	2020	2021	2022	2023	2024
Lower threshold (modulated)	16	16 (16.5)	16 (18)	16	16	14	14	14	14	14
Upper threshold (modulated)	24	24 (24.8)	24 (27)	24	24	22	22	22	22	22
NERL performance	5.2	25.0	12.6	N/A	N/A					N/A

Source: CAA

Note: [1] NERL is forecast to have an Impact Score that falls within the (modulated) range in 2018.

4.37 The thresholds beyond which NERL can earn a bonus or penalty are determined with reference to C2 and will be modulated to account for any material variations between actual and forecast traffic volumes, as explained in Appendix E.

C4 target and incentive

4.38 C4 provides a metric to measure and an incentive on NERL to avoid individual days of particularly severe disruption, which have a significant impact on airline service. Unlike the other capacity metrics, such severe disruptions are generally due to some form of system failure rather than an underlying shortfall in ongoing capacity. 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. The metric is designed to capture exceptional events, so under typical operating conditions NERL would not be expected to reach the penalty threshold.

4.39 An explanation of how the C4 target values are derived is set out in Appendix E.

4.40 Table 4.4 presents NERL's performance against the C4 metric in RP2 to date and sets out our proposed C4 penalty threshold for RP3. We consider it is appropriate to lower the penalty threshold to 1,800 for RP3. Following the Independent Enquiry into NERL's resilience and the introduction of a resilience condition in the NERL licence, users can reasonably expect that such exceptional events would become even less frequent and less disruptive.

Table 4.4: CAA proposed threshold and performance for C4

Daily Excess Delay Score	RP2					RP3				
	2015	2016	2017	2018[1]	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	N/A	N/A					N/A

Source: CAA

Note: [1]NERL is forecast to come in below the threshold in 2018.

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

Exemption days for C3 and C4

4.42 Exemption days apply to C3 and C4 in RP2 and allow NERL to exclude up to 75 days in which system changes or airspace changes have resulted in delay.

4.43 NERL has 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.

4.44 NERL's proposal would exclude agreed upon transition allowances from 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. The transition allowance would be agreed between NERL and users through existing processes such as the SIP and targeted consultations, which would take place at least three weeks before each transition.[31] NERL has said its proposal may offer a more targeted approach to excluding transition-related delays from the capacity metrics.

4.45 We have some concerns with NERL's proposal, specifically:

- NERL's proposal is not consistent with the capacity KPI 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
- it is unclear how we, or users, would be able to monitor/confirm that the delay allowance is only used when NERL actually incurred a transition-attributed delay.

4.46 NERL's RP3 business plan notes that it agreed a transition profile with users as part of the rollout of Extended Computer Display System (ExCDS) in RP2. This offers evidence that NERL and users are able to negotiate a transition profile using the current exemption days approach.

4.47 We propose:

- 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 that are most operationally practical; and

[31] NERL RP3 business plan appendices, p.34.

- 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.

Summary of all service quality incentives

4.48 As discussed above, the performance regulation caps the strength of any additional financial incentives (i.e. in relation to C3 and C4 and for the environment 3Di metric) at 2% of Determined Costs for bonuses and 4% of Determined Costs for penalties. This is in addition to the maximum 2% bonus, and at least equal penalty, for the mandatory C2 metric.

4.49 In line with the proposals for C2, we propose a moderate increase to the strength of C3 and C4 incentives which carry most value to customers. We propose that the maximum allowed bonus under the performance regulation is applied to additional incentives.

4.50 The table below summarises the proposed financial incentives for NERL performance on capacity and environment in RP3, and compares them to the incentives in RP2.

Table 4.5: Summary of financial incentives

	RP2 (% of revenue)		RP3 (% of Determined Costs)RP3 (% of DCdDetermined cCosts)	
Term	**Maximum bonus**	**Maximum penalty**	**Maximum bonus**	**Maximum penalty**
C2	0.25%	0.25%	0.5%	0.75%
C3	0.75%	0.50%	1%	1%
C4	N/A	0.25%	N/A	0.5%
3Di	1%	1%	1%	1%
Total	**2%**	**2%**	**2.5%[32]**	**3.25%**

Source: CAA

Additional requirements for the performance plan

Measures put in place to achieve local targets

4.51 In its RP3 business plan NERL sets out the measures to achieve local targets and mitigate any potential impacts of traffic growth on service quality by

[32] 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.

introducing significant airspace changes. These include the next stage of LAMP in the south east of England which will utilise performance based navigation (PBN) capabilities on aircraft. NERL also says that the redesign of airspace will facilitate greater resilience to weather and faster recovery following disruption.

Resilience

4.52 Capacity is closely linked to the resilience of NERL's systems and operations. Failure of core systems is a source of significant delays. The resilience of NERL's systems and operations came under scrutiny in the Independent Enquiry into NERL's system failure on 12 December 2014,[33] our review of operating resilience in UK aviation,[34] and our Project Oberon investigation.[35]

4.53 As a result of the Independent Enquiry's recommendations, we introduced a condition into NERL's licence that requires it to prepare, consult on and submit a resilience plan and to review it at least every two years, in accordance with our published guidance.[36]

Consultation questions

4.54 Stakeholders are invited to submit their views on any of the issues discussed in this chapter and in particular on:

- our draft proposals for the targets for capacity metrics and the associated financial incentives; and
- our draft proposal to introduce modulation for the C2 metric for material variation between forecast and actual traffic volumes.

[33] NATS system failure enquiry

[34] CAP 1515 - Operating Resilience of the UK's aviation infrastructure and the consumer interest (July 2017).

[35] CAP 1578 - Investigation under section 34 of the Transport Act 2000: Project Oberon, Final Report (August 2017).

[36] CAP 1682 - Decision on modifications to Condition 2 of NATS (En Route) plc licence in respect of resilience planning, policy statement on enforcement and resilience plan guidance (June 2018).

CHAPTER 5

NERL RP3 costs

Introduction

5.1 More than half of NERL's cost base relates 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 modernise its systems and support airspace modernisation.

5.2 This chapter sets out our assessment of NERL's costs, including:

- operating costs (excluding depreciation and pensions);
- the costs and revenues associated with NERL's non-regulated activities;
- pension costs; and
- capital expenditure (which feeds directly in to NERL's regulatory asset base (RAB) and the allowances for regulatory depreciation, as explained in chapter 7).

5.3 We have based our assessment 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 and;
- GAD's report on NERL's pension costs.

5.4 In developing our final proposals for the UK performance plan we will also take account of the Commission's guidance on cost efficiency targets (when they have been finalised) and the responses to this consultation.

5.5 In making our assessment we have taken account of the importance of the services that NERL provides, the high value that the users of its services place on NERL providing a resilient service and the importance of playing a full part in

driving forward and successfully delivering airspace modernisation over the RP3 period.

5.6 In setting the revenue under the performance plan, we have sought to set revenue allowances that are consistent with NERL meeting its statutory obligations, including safety, and providing 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 are mindful that NERL proposes to continue to undertake significant investment in its systems and organisation, which have the potential to improve the efficiency of its operations. It is for NERL as an organisation, and its management team and Board in particular, to make specific decisions about how best to run the organisation within the revenue allowed under the performance plan. Our decisions on Determined Costs are not specific recommendations for how NERL should operate or invest in its business.

Operating costs (excluding depreciation and pensions)

5.7 In 2017 (the last year for which we have audited information available) NERL's en route operating costs (excluding depreciation and pensions) were about £350 million.[37] 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.

5.8 NERL has said increases in its costs are driven by growth in traffic and significant changes to the way it expects to operate its business in the coming years. It will be introducing new technology to replace existing legacy systems, undertaking an airspace modernisation programme, improving operational resilience and dealing with air traffic growth and more complex interactions between air traffic movements in busier airspace. NERL's en route forecast RP3 operational costs are set out in Table 5.1 below.

Table 5.1: NERL's en route operational expenditure in RP3[38]

2017 CPI prices	2017	2018	2019	2020	2021	2022	2023	2024
Wages & salaries	229	238	247	251	248	263	262	254
Non-staff operating costs	119	141	163	174	174	177	175	171
Exceptional costs	1	7	12	2	2	2	2	2
Total	350	386	422	426	424	441	438	427

Source: NERL RP3 business plan.

[37] For UKATS only, excluding Oceanic.

[38] Note table 5.1 does not include Oceanic costs.

Staff costs

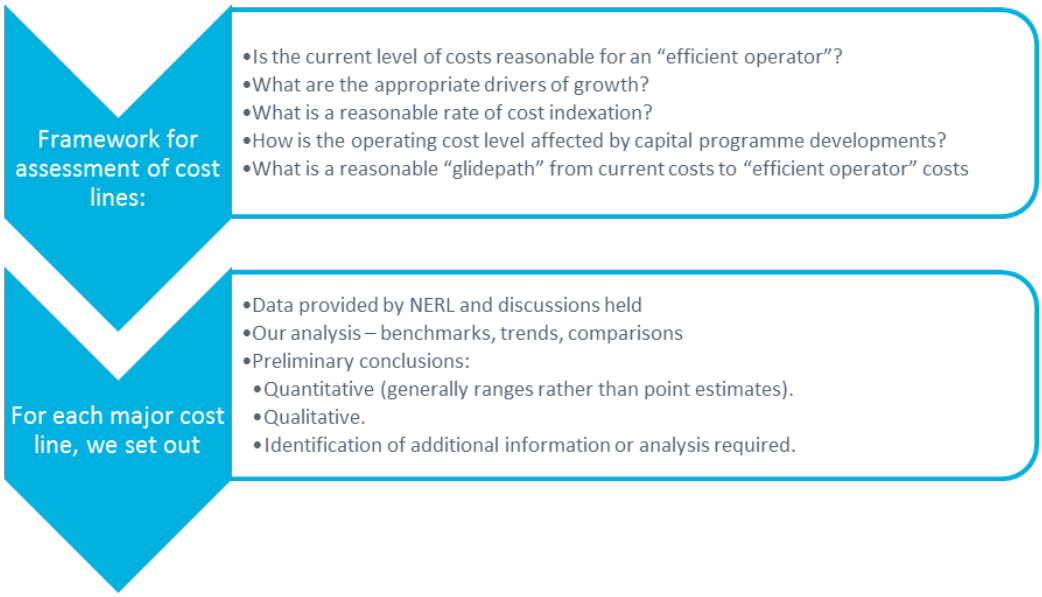
5.9 The Steer/Helios study and the views of airline stakeholders in the CCWG Co-Chairs' Report suggest certain aspects of NERL's forecasts of staff increases have not been fully justified:

- the projection of an increase in staff numbers for operational air traffic control officers (ATCO) from 868 in 2019 to 1,018 in 2024;
- the projection of an increase in trainee ATCO staff numbers from 116 in 2017 to 323 in 2020 (with a decline to 195 by 2024); and
- the growth in full time equivalent (FTE) headcount for 'other support staff' in certain grades.

5.10 Although detailed bottom-up evidence was provided by NERL at a workshop in August 2018 on the numbers of ATCOs required, alternative resource options were not described in detail. As noted in the CCWG Co-Chairs' Report airspace users were not persuaded by the evidence provided by NERL.[39]

5.11 In the light of the above concerns Steer/Helios analysed staff costs through benchmarking of salary growth; benchmarking of pensions; and analysis of FTE requirements. They constructed a stylised "efficient operator" model of NERL based on the process set out in the figure below.

Figure 5.1: Steer/Helios efficient operator assessment framework

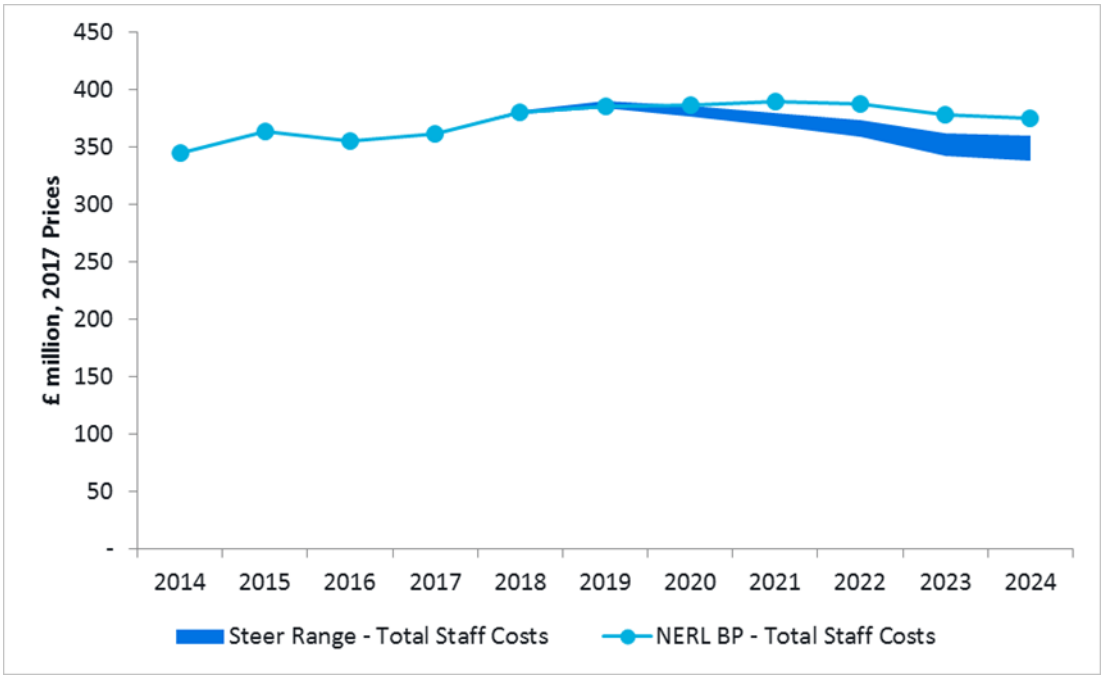


Source: Steer/Helios

[39] Gatwick Airport has also noted that NERL's view of its ability to deliver sufficient numbers of operational ATCOs appears optimistic given its own predictions regarding the demographic of current ATCOs and ability to train ATCOs in a complex, high tempo operation – Gatwick response to NERL RP3 business plan, p.1.

5.12 The figure below shows the range of potential staff cost levels identified by the Steer/Helios efficient operator model relative to the level of NERL's projected total staff costs. Over RP3, the projected levels represent a reduction to total staff costs of between -3.0% and -7.0%, equivalent to between £57 million and £133 million.

Figure 5.2: NERL business plan and Steer/Helios staff cost ranges (2014-2024)



Source: NATS 23 April, 9 November & 13 November data submissions and Steer/Helios analysis. Cost levels refer to total staff costs as per NATS data submissions (including pensions and redundancy and capitalised labour) and Steer/Helios projected levels.

5.13 The above summary analysis suggests there may be scope for NERL to consider more ambitious efficiency targets in relation to its staff costs. At the same time, it is important to note the risks to under-staffing in terms of delivering a resilient service. Staff resourcing requires significant forward planning by NERL given ATCO supply constraints across the UK and European industry, and that it currently takes NERL at least three years to train ATCOs who would then require around two years more to obtain more than one validation. Nonetheless, in the medium and longer term we would expect the investment NERL is undertaking in new systems to drive efficiencies, and it is not clear that such opportunities are fully reflected in NERL's business plan.

5.14 NERL commissioned NERA Economic Consulting (NERA) to test whether wages were in line with market benchmarks. NERA concluded that NERL's wages are

broadly in line with market benchmarks.[40] Steer/Helios concluded ATCO salaries were high relative to comparable jobs but in line with other European ANSPs and that anticipated salary growth was reasonable. Steer/Helios concluded that ATSA salary levels appeared high compared to benchmarks and that NERL should consider restructuring some or all ATSA roles over the longer term.

Non-staff costs

5.15 As shown in Table 5.2, the level of non-staff costs increases very significantly up to 2020 and then remains broadly constant in real terms over the remainder of the RP3 period. NERL has said increases in costs are driven by growth in traffic and significant changes to the way it expects to operate its business in the coming years.

Table 5.2: NERL's en route operational expenditure in RP3[41]

2017 CPI prices	2017	2018	2019	2020	2021	2022	2023	2024
Non-staff operating costs	119	141	163	174	174	177	175	171

Source: NERL RP3 business plan

5.16 The Steer/Helios analysis of non-staff operating costs focused on specific cost items that they classified either as technical systems or third-party costs, as set out below:

- technical systems costs including:
  - asset management;
  - future ATM capability; and
  - FAS Facilitation Fund/Opex Flexibility Fund.
- third party costs including:
  - rent and rates;
  - utilities;
  - maintenance; and
  - catering.

5.17 The cost items listed above do not account for all of NERL's non-staff operating costs and Steer/Helios did not carry out a detailed assessment on every cost

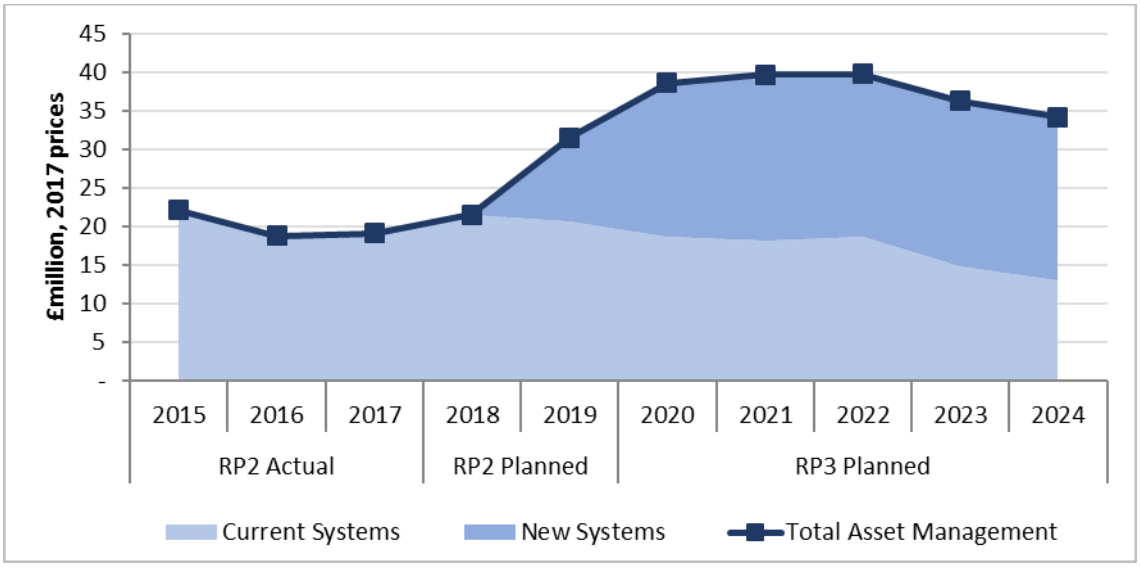
[40] NERA's econometric analysis identified ATSA pay as being above the market benchmark but concluded that once special factors, which could not be picked up by the econometric modelling, were taken into account then the pay rates for ATSAs were broadly in line with market rates.

[41] Note Table 5.2 does not include Oceanic costs.

item due to lack of availability of benchmarks, the unique nature of some of NERL's costs (making comparability difficult) and/or because some cost lines represented only small amounts.

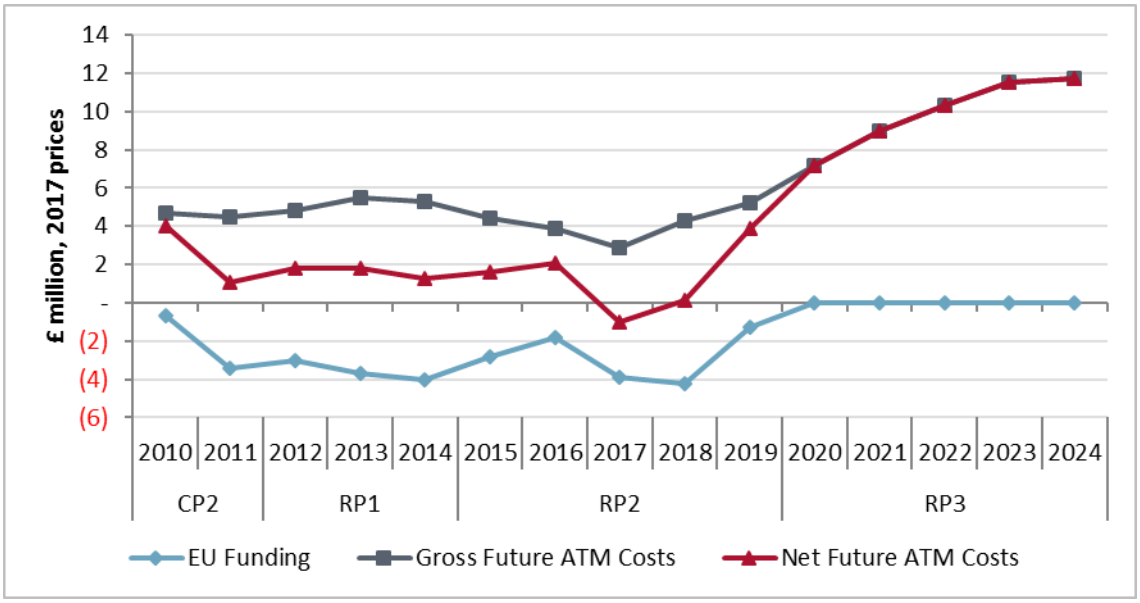
5.18 The figures below show two of the key non-staff operating cost items. The first figure shows total asset management costs, throughout RP2 and RP3, split into the costs of the current and new systems, and the second shows future ATM capability costs, between 2010 and 2024, split into gross costs, net costs and EU funding (shown as a negative cost). The second figure shows gross spending on Future ATM Capability, as well as the corresponding figure net of EU funding (which is assumed not to be available in RP3). Should the loss of EU funding not transpire or is replaced by equivalent UK funding, NERL has agreed that these funds could be returned via the "other revenues" mechanism in the CRCO tables, which is in line with the European charging regulations.

Figure 5.3: NERL historical and projected asset management costs (2015-2024)



Source: Steer/Helios and NATS 9 November 2018 data submission

Figure 5.4: NERL historical and projected Future ATM capability costs (2010-2024)



Source: Steer/Helios and NATS 22 June & 13 November 2018 data submissions

5.19 Steer/Helios conclude:

- asset management operating costs for the operational systems increase significantly in the last two years of RP2 and remain at a level in RP3 which is significantly higher than has historically been the case. NERL has explained that the introduction of new operational systems running in parallel with legacy systems increases capabilities, resilience and cyber protection associated with the new systems justify the costs. However, it is difficult to establish whether these costs provide value for money and although potential reductions have not been quantified efficient levels of costs might be lower than the forecasts made by NERL;
- future ATM Capacity spend increases in RP3 partly due to the loss of EU funding but also driven by higher levels of actual expenditure. The levels of NERL's forecast spend remain within benchmark proportions of research and development spend in comparable organisations. Nonetheless, given the nature of the funds, governance measures giving stakeholders the opportunity to influence their use should be considered.

5.20 The CCWG Co-Chairs' Report also noted that the airspace users were concerned about the overall profile of combined asset management and technical staff costs.

CAA assessment

5.21 We have based our assessment of NERL's costs on a range of evidence. In addition to the information in NERL's RP3 business plan, we have considered historical trends and information on cost efficiency:

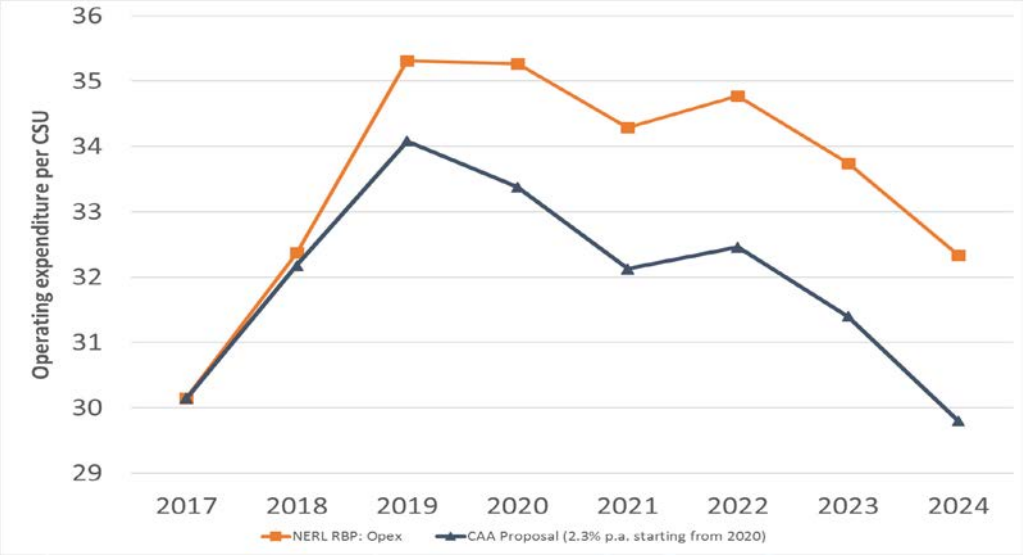
- operating costs per CSU from 2007 to 2017 reduced by around 2.3% per year;
- average operating cost outperformance from 2007 to 2017 was c.4.9%; and
- the PRB estimated that the potential for operating and capital cost efficiencies from its 2014 to 2016 baseline was around 8%.[42]

5.22 We have also considered carefully the analysis undertaken by Steer/Helios and in particular where there was alignment between the Steer/Helios analysis and airspace users' feedback that cost level projections were not fully justified.

5.23 While we are concerned with the increase in cost in the later years of RP2 and the reduction in cost efficiency from 2017 to 2020, we do acknowledge that NERL needs to deal with quality of service issues, make further progress with technology change and push forward work on airspace modernisation. We have therefore accepted NERL's projections of cost increases between 2017 to 2019, but we assume NERL can start to achieve more significant cost efficiency gains from 2019, rather than from 2020 as in its business plan.

5.24 Bearing the above in mind, we propose a reduction of 2.3% per year in operating costs per CSU (consistent with the historical trends discussed above). This is close to the 2.2% per year in NERL's RP3 business plan from 2020. However, we apply our proposed reduction starting from 2019 for all five years of RP3 whereas NERL's plan shows broadly flat levels of unit costs between 2019 and 2020.

Figure 5.5: Comparison of CAA projections and NERL's forecasts of en route unit operating costs



Source: CAA. Excludes pensions. The difference between years 2017 to 2019 is due to STATFOR traffic forecast.

[42] PRB advice to the Commission in the setting of Union-wide performance targets for RP3 (September 2018).

5.25 Our draft proposals result in a cumulative reduction of £71 million in operating costs (excluding depreciation and pension costs) to NERL's RP3 business plan (an annual reduction of around £14 million, or 3%).[43] NERL's operating costs at the end of the RP3 period would be £67 million (or 19%) higher than their actual operating costs in 2017. We have tested the reasonableness of our proposal against Steer/Helios' high and low cost scenarios, which imply cumulative reductions in operating costs in the range of £57 million to £133 million over the period of RP3.

Table 5.3: 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

Non-regulatory revenues and costs

5.26 Under the single till calculations that are used to set the price control, our forecast of the revenue that NERL earns from its non-regulated activities (activities other than en route, London Approach and Oceanic services) is deducted from regulated revenue requirements in calculating its price control revenue and Determined Costs. This revenue is mainly from 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.

5.27 NERL's non-regulatory revenue in 2017 was £115 million and this revenue has exceeded the projections made at the RP2 price control review in each year of RP2 to date, with outperformance of around 20% in 2017.

5.28 NERL's RP3 business plan forecasts its non-regulatory revenue will 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:

[43] All figures are based on total opex (excluding pension costs).

- 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 reduced pipeline of 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.

5.29 We commissioned CEPA to review NERL's approach to cost allocation and assess the reasonableness of their non-regulatory revenue. CEPA concluded that:[44]

- NERL's approach to forecasting FMARS and North Sea helicopters income appears reasonable;
- it did not identify any material irregularities or omissions in NERL's approach to forecasting intercompany revenues, though did highlight that areas where NERL's processes for identifying commercial opportunities and charging a market-based return could be more transparent. We note that similar issues were identified at RP2 and NERL should now take the necessary steps to improve transparency in these matters; and
- while NERL has explained the reduction in other revenues, stating that it will instead focus on delivery of critical customer priorities in RP3, there may be scope for more ambition if, for example, more resource is found to support other revenue sources or if NERL is able to make additional use of joint ventures to expand the resources available.

5.30 The CCWG Co-Chairs' Report noted that *"whilst airlines understand that NERL should prioritise its day to day business they are concerned that NERL has not shown enough ambition or creativity in this area to overcome the reduction in some of its non-regulated income revenue streams*".[45]

5.31 We understand that NERL plans to concentrate on core services in RP3 and this may reduce some of the scope for activities generating non-regulatory revenue.

[44] CEPA, NERL's Cost Allocation and Non-Regulatory Income Forecasts (December 2018).

[45] RP3 Customer Consultation Working Group, Report of the Co-Chairs (October 2018).

Nonetheless, a key question is whether the reduction in its non-regulatory revenue is consistent with its forecasts of operating costs, which reflect significant increases in the early years and then only modest efficiency gains in later years.

5.32 NERL has not provided detailed information as part of its RP3 business plan that fully explains these matters and, in response to our request for supplementary information on these matters, NERL has provided little substantive additional information.

5.33 In these circumstances, where there is uncertainty about the robustness of NERL's revenue and cost forecasts, we have decided to make a revenue adjustment equal to half the reduction between NERL's non-regulatory revenue and its projections for the period of RP3. This reflects the potential both for cost savings and revenue increases, but for simplicity we have implemented this in our financial modelling as a revenue increase of £49 million over RP3 (about £10 million per year or 2% of operating costs excluding pensions).[46] We consider that it is an important principle that where NERL undertakes non-regulated activity, regulated customers do not bear unnecessary risks if non-regulated contracts are lost or reduced in scale. NERL should be managing its cost base and contractual arrangements to address this risk.

5.34 For revenue from the FMARS contract, we have 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 and capital costs, we have calculated revenue from the FMARS contract that is £13 million lower than in NERL's RP3 business plan. Taking these adjustments together leads to a net increase in non-regulatory revenue of £35 million over RP3, as shown in Table 5.4 below.

Table 5.4 – CAA's draft proposal for non-regulatory revenue (£m, 2017 CPI prices)

	2017	2018	2019	2020	2021	2022	2023	2024	RP3 total
NERL's business plan	115	97	94	97	93	92	91	91	464
CAA draft proposals	115	97	94	105	99	98	98	98	499
Difference	N/A	N/A	N/A	8.4	6.2	6.8	6.8	7.0	35.3

Source: CAA analysis of NERL's RP3 business plan

5.35 We expect NERL to provide significantly better information on these costs and revenues in response to this consultation. If NERL provides a better justification

[46] This excludes non-regulatory income from the MOD FMARS contract and London Approach. London Approach revenue and the FMARS contract revenues are estimated separately.

we will consider reducing the revenue adjustment. If it fails to do so, we will consider making a larger adjustment based on all of the difference between 2017 non-regulated revenue and NERL's business plan forecasts of these revenues.

Pensions

Pension costs

5.36 Pension costs represent a significant portion of NERL's staff costs (around 25% in RP3). The 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 prevents many of the steps that other schemes have taken to reduce liabilities such as closing the scheme to future accrual by existing members and limits the scope to reduce benefits.

5.37 NERL's RP3 business plan sets out the actions that NERL has taken as an employer to mitigate the cost and risk of the DB scheme. It shows pension costs reducing from £452 million in RP2 to £433 million in RP3 (including both its en route and Oceanic activities). The reduction in pension costs is largely due to an improvement in the funding position of the DB scheme at the end of 2017, compared with 2015 and 2012, partly offset by increases in DC and pension cash alternative costs.

5.38 We commissioned GAD to review certain aspects of NERL's pension arrangements. GAD found that;[47]

- NERL's DB and DC pension schemes are more generous than typical UK private sector pension schemes (although there is limited scope to change the benefits due to protections in place under the scheme's Trust Deed and Rules, the 'Trust of a Promise' document and the 'Memorandum of Understanding');
- 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; and

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

- the CAA should consider whether the level of prudence in the assumptions supporting the DB scheme valuation is appropriate given the low risk characteristics of the regulated monopoly business that supports the scheme.

5.39 Based on the GAD report, we consider that there may be opportunities for future DB pension scheme valuations to include assumptions that reflect a more appropriate level of prudence (such as assumptions that properly reflect the strong regulatory protections around pension costs). Such an approach would increase the probability of a surplus arising on the DB pension scheme at the next valuation in 2020.[48]

5.40 Our business plan guidance said that NERL should "explain and, where *appropriate, provide evidence for how it can help manage the risks associated with a DB scheme in a way that acknowledges and respects that it is underwritten by customers, i.e. in the interest of customers".*[49] In a letter to NERL in September 2018 we also asked that it *"set out its approach to managing the risk of trapped surpluses and any associated high-cost de-risking in a way that is in the interest of customers"*.[50]

5.41 We do not consider that NERL's RP3 business plan has provided sufficient information or comfort on how the risk of a trapped surplus for the DB scheme[51] and any associated high-cost de-risking would be managed in a way that is in the interests of its customers and the users of its services. NERL's business plan states that it favours *"adopting an approach which ultimately targets funding the scheme on a long term low risk basis"* and that, if a scheme surplus arises, NERL *"will work closely with trustees to ensure that an appropriate balance is struck between using this opportunity to de-risk the scheme towards an appropriate long term investment strategy and reducing the projected level of future pension contributions, which in turn would reduce prices"*.[52] In its report, GAD concludes that these statements indicate that, if there is a surplus, priority might be given to de-risking the investment strategy if the trustees are supportive of this approach. This can potentially lead to higher contributions and costs to

[48] The GAD report concludes that if neutral estimate investment returns are achieved on the scheme assets then a surplus is expected to emerge during 2022. The likelihood of a surplus will also rise if future valuations reflect discount rates more towards the upper quartile or frontier of the Pension Regulator benchmarks in GAD's report, or if there is a change in the indexation of past service liabilities to CPI (as set out in NERL's RP3 business plan).

[49] CAP 1511 - Strategic outcomes for the economic regulation of NERL 2020-2024: discussion document (April 2017), p.44.

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

[51] A trapped surplus describes the situation where contributions made to the DB scheme cannot be recovered (or are slow, difficult or costly to be recovered) by the employer, despite not being needed by the scheme.

[52] NERL RP3 business plan, Appendix H, page 56.

customers as they will have funded a surplus that would be then be used to help fund a high-cost de-risking strategy.

5.42 Given the potential for lower levels of prudence at future valuations that 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 around how the risk of a trapped surplus would be managed in the interests of customers, we have not included an allowance for DB scheme deficit repair payments from 2022, which is the first year that we expect payments to be set following the 2020 valuation. This reduces the RP3 Determined Costs by £36 million compared to NERL's RP3 business plan.

5.43 We note that NERL will continue to have strong protections around pass-through of DB pension costs under the performance regulation. This means that, following the next pensions valuation in 2020, any DB deficit repair payments that are required from 2022 due to observed financial market conditions being worse than expected and are deemed to be efficient should be eligible for recovery. 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 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 and appendix D.

5.44 The CCWG Co-Chairs' Report notes that airlines have raised concerns around the generosity of the DC scheme for new starters. We consider that ongoing pension costs, including DC pension costs, are best considered together with other staff costs given pensions form part of the overall staff compensation package. Therefore, we have applied our overall operating cost efficiency assumptions to NERL's forecasts of pension costs, as we have to other elements of its cost base. This reduces ongoing pension costs (including DC scheme costs) by about £12 million in RP3. The combined savings of the adjustment to pension deficit recovery costs and ongoing pension costs are shown in Table 5.5 below. Further details are provided in Appendix B.

Table 5.5 – CAA's draft proposal for en-route pension costs (£m, 2017 CPI prices)

	2017	2018	2019	2020	2021	2022	2023	2024	RP3 total
NERL's RP3 business plan	80	74	70	89	88	87	85	66	416
CAA draft proposals	80	74	70	88	87	67	64	62	368
Difference	N/A	N/A	N/A	-1.1	-1.8	-20.3	-21.0	-3.5	-47.6

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

5.45 NERL has provided a draft of a possible Regulatory Policy Statement pertaining to pension costs.[53] NERL expects this would allow 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 customers.

5.46 A letter from the trustees to the CAA, in January 2019, notes 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.[54] They suggest an appropriately drafted Regulatory Policy Statement could provide greater certainty and avoid a reduction in the assumption on returns.

5.47 We consider that it is in the best long-term interest of customers to continue to stand behind NERL's covenant to honour its pension 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.

5.48 Although a Regulatory Policy Statement would not take precedence over our statutory duties and legal obligations in setting a performance plan, it would be a strong signal as to how we would be expected to act when setting future price controls for NERL. In that sense it would reduce regulatory discretion. We consider it is important that the introduction of such a statement can be seen as providing a clear benefit to customers. NERL's business plan and the letter from trustees articulate a benefit from the draft Regulatory Policy Statement of £400 million as at 31 December 2017 based on preventing a 25 basis point reduction in the trustees' assumption on long-term returns. We understand this to be an estimate of the value of maintaining the status quo compared with a weakening of the regulatory framework covering NERL's pension costs. However, so far neither NERL's business plan nor the letter from the trustees has articulated or quantified a positive benefit in reduced costs to customers compared with the status quo from the introduction of such a statement.

[53] Set out in NERL RP3 business plan in Appendix O.

[54] Letter from Joanna Matthews (Chair of CAAPS trustees) to Richard Moriarty (CEO, CAA) dated 7 January 2019 (www.caa.co.uk/natslicence)

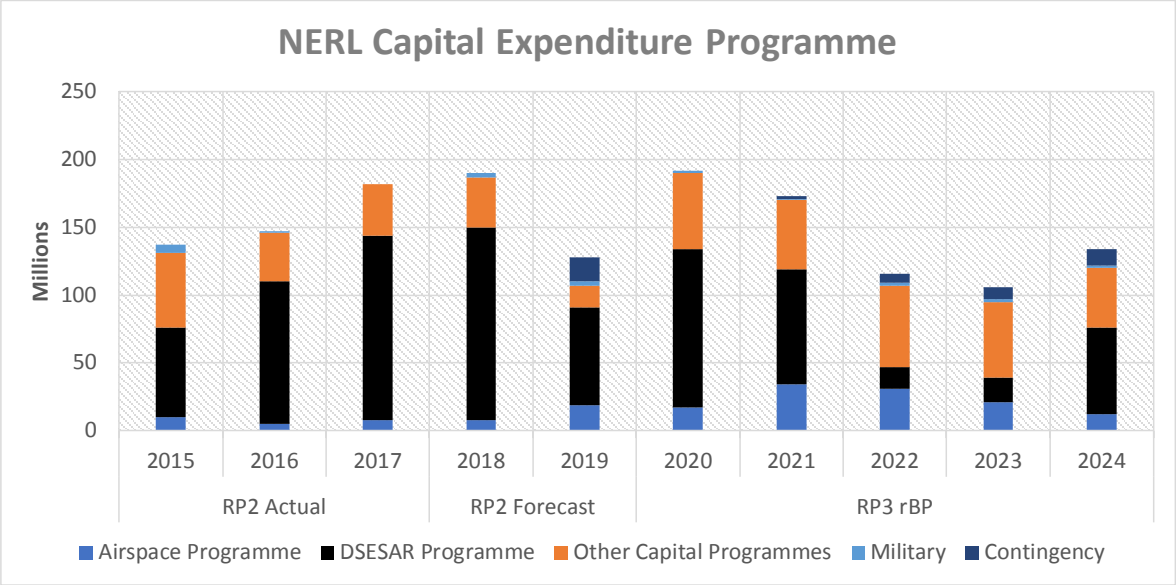
5.49 The GAD report notes that some of the actuarial assumptions used by NERL's DB pension scheme may not fully reflect the low risk nature of NERL's business environment and the framework for economic regulation for NERL. We would welcome views from stakeholders on the value for customers from adopting a Regulatory Policy Statement. This 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 Regulatory Policy Statement. 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, but it would be open to them to adopt an equivalent approach to their valuation of the scheme's assets and liabilities.

Capital expenditure in RP3

5.50 NERL's business plan includes a capital plan that would involve the continuing replacement of its base technology platform, in part to support airspace modernisation. Both the upgrade of its technology systems and airspace modernisation are important and desirable for UK aviation. The CCWG Co-Chairs' report noted there was agreement with the broad thrust and scope of NERL's capital programme, but airlines said they lacked the information to assess whether the 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.

5.51 In its business plan NERL proposes a capital investment programme with a similar investment level to RP2. Expenditure in 2017 prices is forecast to total £782 million in RP2 and £763 million in RP3, equating to £1.55 billion in 2017 prices across the 10 years, as illustrated in the figure below.

Figure 5.6: NERL's Capital Expenditure Programmes



5.52 Within NERL's business plan, capital expenditure is presented in five major programmes (plus the Oceanic programme which is not addressed in this analysis) with a breakdown of sub-programmes presented in Appendix L of the business plan.

5.53 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 change 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.

5.54 Steer/Helios note that NERL is committed to major DSESAR programme and forecasts costs within the range of £750 million – £830 million. This programme originally included the necessary costs to accelerate TC FourSight into RP3. Since then, TC FourSight has been moved and is no longer part of the DSESAR programme. Given this significant scope change (TC FourSight is likely to have a capital expenditure requirement of more than £100 million across RP3 and RP4), Steer/Helios question why the DSESAR programme capital expenditure forecasts have not been reduced by NERL. They also comment that the use of ExCDS for DP Lower and the airspace sector changes (which were undertaken instead) would not appear to justify NERL's retention of its earlier cost estimates for the DSESAR programme.

5.55 Steer/Helios also note that there is insufficient detail provided on the capital programme in NERL's business plan to assess, for example, the sub-programme

benefits. They suggest that the NERL business plan gives qualitative detail and information on the proposed capital programme in RP3, but it does not allow:

- traceability of quantitative benefits at sub-programme level;
- testing of whether the benefits proposed are appropriate or underplayed;
- testing that the costs proposed are efficient; nor
- understanding of programmatic risks and their impact.

5.56 There is a mix of “maintain operations” and “new capabilities” within the plan and the latter elements require more details on the resulting benefits. In particular, the benefits from future operational changes (DSESAR tools and airspace) need to be better explained and justified. Steer/Helios note that although about “70% of NERL’s capital programme has a relatively high level of maturity”, which reflects its stage in the lifecycle, there is considerable uncertainty about remaining investment, especially the airspace programme.

5.57 More adaptability in the capital expenditure plan could reduce risk and allow efficiency to be better tested. For example, major projects should be reviewed prior to commencement so that their cost and risk can be tested before work starts.

5.58 Steer/Helios suggested what it called 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.

5.59 This possible scenario includes reductions in spending as set out in Table 5.6 below.

Table 5.6: 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
Service improvement	37	30
Business resilience	88	55
Contingency	34	34
Total capital expenditure[55]	715	579

Source: Steer/Helios

5.60 Bearing in mind the importance of airspace modernisation, we have allowed all of NERL's forecast airspace modernisation capital expenditure in our proposals. In respect of other categories of spending we have 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.[56]

5.61 The Steer/Helios feasibility scenario identifies possible savings across NERL's DSESAR and non-core programmes[57] of some £136 million and there is £34 million of contingency in NERL's plans. On the other hand, we must recognise the high-level nature of the Steer/Helios work and the importance that NERL's customers place on receiving a high quality service. Nonetheless, there is a degree of uncertainty over the level of efficient spending. For the purposes of this draft performance plan we have assumed that NERL will be able to realise approximately £50 million of savings, which is less than a third of the total possible savings and contingency identified by Steer/Helios or one half of the costs of the TC Foursight programme that will now be delivered separately and across both RP3 and RP4. This means that we are assuming that NERL spends all of its forecast spending on airspace modernisation and 92% of its other forecast spending (including the £34 million it has identified as contingency). Although we have taken into account Steer/Helios' views on feasible reductions in the expenditure for specific parts of NERL's total programme, our reduction is

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

[56] IATA's response to NERL's RP3 business plan noted that while airlines were broadly supportive of the strategic direction for airspace modernisation, they could not support the proposed costs as efficient because of the limited options analysis including project phasing, level of detail provided (including lack of cost-benefit analysis) and the specific and specialised nature of certain investments.

[57] Non-core programmes are technical resilience, service improvement and business resilience.

based on a lack of confidence in the cost efficiency of NERL's proposed programme as a whole. We are not expressing a view on the specific investments NERL should make – that is a matter for it to decide in consultation with airspace users.

Table 5.7: NERL RP3 Business Plan en route capital expenditure vs CAA draft proposed RP3 capital expenditure (£m 2017 prices)

	2017	2018	2019	2020	2021	2022	2023	2024	RP3
NERL RP3 BP	176	169	142	193	173	114	102	132	715
CAA draft proposals	176	169	142	179	162	108	96	122	667
Difference	N/A	N/A	N/A	-14	-11	-7	-7	-10	-48

Source: CAA

5.62 It is also important to note that the regulatory framework provides for a true-up mechanism for capital expenditure. Where NERL's efficient capital expenditure is greater than we have allowed for in its Determined Costs, it can recover its actual costs in future reference periods. Nonetheless, this will be subject to efficiency testing, as discussed below in the section on governance.

5.63 Early in the RP3 period, we also propose to conduct an ex-post review of NERL's RP2 capital expenditure to consider whether there is sufficient evidence that the spending was efficient to justify customers funding the expenditure. If NERL is not able to provide evidence that it has incurred spending efficiently we may not allow such costs to be recovered from consumers in RP4.

Strengthening the governance arrangements and licence obligations for NERL's capital programme

5.64 Early in RP2 the scope of NERL's capital expenditure programme changed significantly with forecast costs increasing by about 25%. Airspace users have said that they felt that they had little opportunity to challenge either the scope or cost of the revised programme. They said NERL provided insufficient evidence on the benefits of the revised programme, and there was no discussion of options and relatively little discussion of risk. As the RP2 period progressed NERL made some incremental improvements to the transparency of its SIP 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, experience of the RP3 review suggests that NERL's governance arrangements are insufficient to provide airspace users and other stakeholders with an appropriate degree of comfort with respect to its capital expenditure plans.

5.65 We commissioned the Independent Reviewer[58] to review NERL's processes and to propose enhanced arrangements. The Independent Reviewer's proposals[59] included: [60]

- establishing a firm baseline for RP3 with clear scope, timescales, costs and benefits against which performance and other changes could be monitored and reviewed in RP3;
- that NERL should provide regular updates (every two months) to supplement the more extensive six-monthly updates it already provided;
- broadening the scope of independent oversight to encompass the content of NERL's capital programme and the accuracy of its reporting; and
- modifying NERL's licence to allow the CAA to opine on the content of the SIP as well as its form, scope and level of detail.

5.66 We do not consider that our role should extend to giving an opinion on the content of the SIP during the reference period, as this would weaken the accountability of NERL for its capital programme. Taking account of the suggestions by NERL and the other recommendations of the Independent Reviewer we propose 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 (including the CAA, DfT (if related to airspace), airports (dependent on subject) and airlines) would be triggered;
- the role of the Independent Reviewer to be enhanced to include assessing how well NERL has explained and justified its capital programme in its SIP, as well as reviewing its reporting;

[58] In RP2, under condition 10 of the NERL licence, we appointed an Independent Reviewer to support stakeholder understanding of NERL's reporting.

[60] NERL SIP: Review of SIP Process – Independent Reviewer Report (January 2019) (published at www.caa.co.uk/natslicence)

- the Independent Reviewer will report both to the CAA and airspace users, and these reports will (inter alia) inform our decision on whether capital spending should be allowed in the RAB following our ex-post reviews of capital efficiency. Adjustments would be made in the reference period following that in which the spending has been incurred. If NERL does not provide persuasive evidence that spending has been efficiently incurred we may exclude such spending from its RAB; and
- if there are significant weaknesses in NERL's ongoing provision of information on its capital spending then any overspend during RP3 will only be remunerated at its cost of new debt finance (rather than the full WACC) during RP3, even if it subsequently passes an efficiency test. As noted above inefficient spending may not be added to the RAB.

5.67 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 are also considering bringing forward a licence modification that would give NERL an obligation to support and drive forward airspace modernisation.

5.68 NERL proposed in its business plan that their (enhanced) SIP governance process could also be used to reach decisions on expenditure from the OFF (discussed further in chapter 9). The CCWG Co-Chairs' report noted that improvements to the SIP or other shared governance processes will be critical gaining airline agreement on other elements of NERL's RP3 business plan including the proposed OFF.

5.69 Subject to our strengthening proposals above and ensuring proper links with the AMS governance framework, we would support this approach.

Consultation questions

5.70 We would welcome views on any aspect of the issues raised in this chapter, and in particular on:

- our assumptions for operating costs, non-regulatory revenues and capital expenditure to support the calibration of NERL's price control and the Determined Costs in the UK performance plan;
- whether we should consider issuing a Regulatory Policy Statement in respect of our pensions policy; and
- how best to improve the governance and incentive arrangements relating to NERL's capital expenditure and whether NERL should have a new licence obligation to support and drive forward airspace modernisation.

CHAPTER 6

Overall costs

Introduction

6.1 For the draft performance plan we are required by the SES performance framework to report on an overall UK cost efficiency target. In addition to NERL's Determined Costs (discussed in chapter 5) we are required to report on other elements of UK Determined Costs, including:

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

6.2 This chapter also provides a summary of the overall UK unit costs.

Components of UK unit rate: Met Office

6.3 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. The Met Office's proposals for RP3 have been discussed with users and NERL. There was broad support for the baseline plan but with a request for the Met Office to:

- further integrate Met Office advice into NERL services as part of weather resilience activities;
- further engage with flight planning provider organisations to ensure they are aware of and prepared for the rapidly increasing range and amount of data that the Met Office is proposing to make available during RP3; and
- develop performance metrics linked to the main aspects of Met Office activity.

6.4 The Met Office's National Capability costs reflect the en route share of the basic infrastructure needed to operate a weather forecasting service. This includes an appropriate surface and upper air observing network (as specified by the World Meteorological Organisation), the operation of a supercomputer, numerical weather prediction and a contribution to European weather satellite programmes (operated by the European Organisation for the Exploitation of Meteorological Satellites). In the last two years of RP3 the Met Office expect the introduction of the next generation of European meteorological satellites; these new satellites

will collect very frequent imagery and data to support the improvements in accuracy and short-range forecasting.

6.5 The contribution of en route services to National Capability costs is calculated in accordance with the guidelines contained within ICAO Document 9161, Manual of Air Navigation Service Economics. In the UK, National Capability costs are divided between civil aviation, UK Government Departments, the Maritime and Coastguard Agency and a contribution from the sale of numerical weather prediction data and other products to third parties, including commercial weather service providers. The contribution of civil aviation to the National Capability has fallen from its original level of around 20% to approximately 15%, reflecting changes in the National Capability cost base and use. This ratio remains consistent with the fraction of funding from aviation services relative to total direct service revenue.

6.6 Service Development and Delivery costs are those associated with providing the specific products and services required as part of the UK's obligations under ICAO Annex 3. This includes the provision of services in support of UK low level aviation, the World Area Forecast System (WAFS) and the Volcanic Ash Advisory Centre (VAAC), utilising human resources (for example, aeronautical meteorologists) and IT production systems (for example, post processing systems that can turn numerical weather prediction data into specific aeronautical information). It is envisaged that further efficiencies will continue to be sought through RP3, in an ongoing drive to reduce costs.

6.7 The provision of an airborne volcanic ash monitoring platform will continue and will complement the ground-based and space-based monitoring capabilities. The current airborne platform is a Cessna 421 twin-engine aircraft that is becoming increasingly difficult and expensive to maintain. This is expected to be replaced early in RP3, with both manned and unmanned vehicles being considered as replacements.

6.8 In terms of support provided to NERL, specific data will continue to be provided and an onsite team of meteorologists will be located in NERL's Swanwick Area Control Centre to continue to provide weather resilience for ATM in the UK. Through RP3, Met Office advice will be developed to fully encompass the Prestwick operations and input information to reduce European weather-related disruption impacting on UK air traffic. It is expected that a Met Office web tool will be made available to enable consistent weather information to be viewed.

6.9 Specific aviation meteorological research and development will be undertaken through RP3, focussing on developments in capability for phenomena identified with users and agreed at the annual Met Office User Forum. Specific areas of research include global en route hazards (convection, turbulence, in-flight icing, high altitude ice crystals) and improved understanding and forecasting within UK

airspace (such as convection and disruptive conditions at UK airports including low visibility).

6.10 A significant amount of work is also planned as part of the UK's contribution to the development of the ICAO WAFS. This will be to increase the detail, amount and accuracy of the meteorological data provided, in response to airspace user requirements and in line with Global Air Navigation Plan and the Aviation System Block Upgrades framework and improving Met Office capability. This represents a significant upgrade in the global provision of wind, temperature and weather-hazard information, used extensively in the flight planning process and developed to enable increased fuel efficiency and hazard avoidance. The shift is a large technology development, with an associated cost of approximately £10 million over RP3. Due the nature of data provision, it is anticipated that this will enable significant efficiencies through reduced manual resource during 2023 and 2024.

6.11 Met Office Determined Costs are summarised in Table 6.1 below. The National Capability costs in 2023 and 2024 reflect the increased investment (and so higher depreciation charges) in the next generation of European weather satellites.

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
Total Met (2017 prices)	29.0	27.7	28.5	31.0	30.6

Source: Met Office

Components of UK unit rate: Department for Transport

6.12 The DfT element of the en route costs represents the UK's share of Eurocontrol's costs.

6.13 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 encouraged efficiency measures designed to reduce Eurocontrol's costs in real terms over the past decade. The sharing factors that determine the proportion of Eurocontrol's costs funded by each Member State and the exchange rate of the euro against local currency, are not under the control of Member States.

6.14 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.

Table 6.2 DfT Determined cost in nominal and 2017 prices for RP3

£m	2020	2021	2022	2023	2024
Total (nominal)	52.2	52.6	53.0	54.2	55.7
Total (2017 prices)	48.8	48.3	47.7	47.8	48.2

Source: DfT

Components of UK unit rate: CAA

6.15 The CAA recovers staff costs, other operating costs and capital costs associated with the regulation of ANS. These are summarised in the table below.

Table 6.3 CAA costs nominal and 2017 prices for RP3

£m	2019	2020	2021	2022	2023	2024
Staff	4.4	8.2	9.4	9.9	10.3	10.7
Other operating costs	2.1	2.5	3.0	3.1	3.2	3.3
Depreciation/cost of capital	0.7	0.3	0.3	0.3	0.2	0.1
Pension costs	6.0	6.0	6.0	6.0	6.0	6.0
Total costs (nominal)	13.2	16.9	18.6	19.3	19.7	20.1
Total costs (2017 prices)	12.6	15.8	17.1	17.4	17.4	17.4

Source: CAA

6.16 Historically, most of these costs relate to the airspace regulation activities of SARG. SARG's duties include the planning and regulation of all UK airspace including the navigation and communications infrastructure. The costs of our safety and economic regulation of en route ANS are charged directly to the ANSPs and form part of their cost base.

6.17 In 2024 we forecast that our airspace related costs will be £17.4 million, compared to £12.6 million at the end of RP2. The increase is largely driven by the current and expected growth in Airspace Change Proposals (ACP). In 2013 and 2014 there were 12-15 ACPs per year for the CAA to consider, but by 2018 this had risen to 82. There will also be a significant number of ACPs required to support the implementation of the AMS, for example the FASI-South programme of airspace design changes will require action at 16 airports in Southern England. 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.

6.18 We plan to increase staff resources in three tranches to deal with the increased ACP workload and airspace modernisation. Tranche one is immediate and for 2019 will be funded by an increase in the CAA Schemes of Charges and the DfT. Tranche two will increase staff numbers in 2020 and tranche three in 2021. Tranche one is dedicated to addressing the existing business demand for ACPs and the requirements of implementing the AMS and tranches two and three are aimed at addressing additional ACP applications beyond the level currently experienced and necessary to support airspace modernisation.

6.19 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.

6.20 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.

6.21 In addition to the above airspace costs, for RP3 we intend to finance an AMS support fund of £10 million over the period. This fund is discussed further in chapter 9 on uncertainty mechanisms. The fund will be similar in purpose and function to the FAS Facilitation (Small Gaps) Fund for RP2, 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.

Table 6.4 CAA costs (including AMS support fund) nominal and 2017 prices for RP3

£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)	12.6	15.8	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	22.0	22.4
Overall CAA Determined Costs (2017 prices)	12.6	17.8	19.1	19.4	19.4	19.4

Source: CAA

Summary of overall UK en route total and unit cost

6.22 The SES performance scheme cost efficiency KPI is established on the basis the overall Determined Unit Cost (DUC) for en route ANS and reflects the costs of the national en route ANSP and the costs of the other entities that contribute to the provision of en route ANS. The KPI 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. The PRB has proposed to the Commission an EU-wide average efficiency target reflecting a real reduction in DUC of 3.3% per annum for the first three years of RP3 and then a 5.3% real reduction for the last 2 years – this equates to 4.1% on average over the whole period.

6.23 Our proposed UK cost efficiency target (DUC) is set out in Table 6.6 below. This is based on the UK Determined Costs, set out in Table 6.5 below. The annual average rates of reduction for real Determined Costs is 2.0% and for real DUC is 3.8% over RP3.

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

Table 6.5: UK Determined Costs for RP3

2017 prices £millions	2019 Base	2020	2021	2022	2023	2024	CAGR 2019 to 2024
NERL	627.3	623.7	589.7	565.8	558.9	550.6	-2.6%
MET	25.5	29.0	27.7	28.5	31.0	30.6	3.7%
NSA& DFT	65.7	66.7	67.3	67.1	67.2	67.5	0.5%
UK	718.5	719.3	684.7	661.4	657.2	648.7	-2.0%

Source: CAA calculations

6.25 This is consistent with the DUC in Table 6.6.

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

Table 6.6: Proposed UK DUC for RP3

2017 prices (£millions)	2019 Base	2020	2021	2022	2023	2024	CAGR 2019 to 2024
NERL	50.06	48.86	45.21	42.61	41.42	40.15	-4.3%
MET	2.03	2.27	2.12	2.14	2.30	2.23	1.9%
NSA& DFT	5.25	5.22	5.16	5.05	4.98	4.93	-1.3%
UK	57.34	**56.35**	**52.50**	**49.80**	**48.70**	**47.31**	**-3.8%**

Source: CAA calculations

6.26 This is consistent with the DUC in Table 6.7.

Table 6.7: Summary

	2019 Base	2020	2021	2022	2023	2024
DC nominal (£000)	752,528	768,472	746,136	735,063	745,057	750,186
Inflation index	104.7	106.8	109.0	111.1	113.4	115.6
DC real (£000)	718,508	719,344	684,742	661,352	657,200	648,749
Total Service Units (000)	12,531	12,766	13,043	13,280	13,494	13,713
DUC real (£millions)	57.34	56.35	52.50	49.80	48.70	47.31

Source: CAA calculations

Consultation questions

6.27 We welcome representations on any aspect of the issues raised in this chapter and in particular the forecasts of Met Office costs, the UK's share of Eurocontrol costs and CAA costs.

CHAPTER 7

Financeability

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 draft performance plan.

7.3 This chapter deals with these issues as follows:

- NERL's RAB;
- regulatory depreciation;
- its cost of capital (which is the allowed return on the regulatory asset base and is made up of an average of the cost of both equity and debt finance); and
- overall financeability.

Regulatory asset base

7.4 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.

7.5 In their RP3 business plan, NERL proposed to continue to index the RAB by the retail prices index (RPI). NERL plan to raise new debt finance during RP3. In our approach to regulation of Heathrow Airport Limited (HAL)[62], we set out that while RPI is no longer regarded as an appropriate measure of inflation, the limited availability of CPI or CPIH-linked bonds in the current market mean that a switch to CPI indexation could increase financing risks and lead to higher costs to customers. Bearing this in mind, we have retained RPI indexation of NERL's RAB for the draft performance plan. 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.

7.6 As set out in the table below our projections of NERL's RAB for RP3 are lower than NERL's business plan forecasts, primarily reflecting the reductions 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). Nonetheless, there are also true-up arrangements in place, so the final level of the RAB will depend on actual levels of capital expenditure (subject to efficiency tests) and the RPI, among other factors.

Table 7.1 – CAA's draft proposal for en route average RAB (£m, year-end outturn prices)

	2017	2018	2019	2020	2021	2022	2023	2024
NERL's business plan	1,003	982	1,008	1,086	1,209	1,298	1,316	1,320
CAA's draft proposals	1,003	979	998	1,067	1,188	1,274	1,279	1,273
Difference	0	-3	-9	-19	-21	-24	-36	-47

Source: CAA analysis of NERL's RP3 business plan

7.7 We engaged Grant Thornton to provide an independent review of the NERL financial model used for these draft proposals, including calculation of the RAB.[63] Grant Thornton identified a discrepancy between the inflation assumptions used in the calculation of the RAB in the model and supporting documents, which makes a small difference of around £0.3 million. We will work with NERL to

[62] CAP 1610 - Economic regulation of capacity expansion at Heathrow: policy update and consultation (December 2017).

[63] Grant Thornton, NATS Financial Model 2018 (January 2019).

resolve this issue ahead of the final proposals. Grant Thornton did not identify any other outstanding issues with the calculation of the RAB in its review.

7.8 Grant Thornton made the general observation that NERL and the CAA may wish to consider developing a comprehensive guide for model calculations. We will work with NERL to check and, where necessary, improve the documentation around the RAB calculations ahead of the final proposals.

Regulatory depreciation

7.9 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 regulatory depreciation allowances between the level of actual capital expenditure and assumed level in previous regulatory price controls.

7.10 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);
- 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.

7.11 As noted above in the section on the RAB we have made lower allowances for capital expenditure and the RPI 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.

Table 7.2 – CAA's draft proposal for en route depreciation (£m, 2017 CPI prices)

	2017	2018	2019	2020	2021	2022	2023	2024	RP3
NERL's business plan	186	173	165	187	154	137	141	152	771
CAA's draft proposals	186	173	165	185	152	133	137	146	753
Difference	0	0	0	-2	-2	-3	-4	-6	-18

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.

7.12 We engaged Grant Thornton to provide an independent review of the NERL financial model used for these draft proposals, including calculation of regulatory depreciation.[64] Grant Thornton did not identify any issues with the calculation of regulatory depreciation in its review.

Inflation

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

7.14 In its RP3 business plan, NERL proposed RPI and CPI inflation forecasts from Oxford Economics (June 2018). We have reviewed these against more recent forecasts published by the International Monetary Fund (IMF), HM Treasury, Bank of England and Office for Budget Responsibility (OBR)[65] and made the following changes:

- for CPI, we have used the IMF forecasts from the World Economic Outlook (October 2018), consistent with the SES regulations. We have checked that these are similar to HM Treasury's average of independent forecasts (November 2018);
- for RPI, we have used HM Treasury's average of independent forecasts (November 2018) to 2022, then set RPI inflation as 1% above CPI (in line with the long-term RPI-CPI wedge estimated by the OBR).

7.15 Our forecast for CPI is higher and our forecast for RPI is lower than NERL's business plan, as shown in table 7.3 below.

[64] Grant Thornton, NATS Financial Model 2018 (January 2019).

[65] IMF, World Economic Outlook Database, October 2018; HM Treasury, Forecasts for the UK economy, November 2018; Bank of England, Inflation Report, November 2018; OBR, Economic and fiscal outlook, October 2018

Table 7.3 – CAA's draft proposal for inflation (%)

	2018	2019	2020	2021	2022	2023	2024
NERL's business plan - CPI	2.44%	1.76%	1.57%	1.71%	1.77%	1.93%	1.96%
CAA's draft proposals - CPI	2.51%	2.17%	2.00%	2.00%	2.00%	2.00%	2.00%
NERL's business plan - RPI	3.46%	3.00%	2.88%	3.03%	3.47%	3.59%	3.54%
CAA's draft proposals - RPI	3.40%	3.20%	3.10%	3.30%	3.30%	3.00%	3.00%

Source: CAA analysis of NERL's RP3 business plan

Cost of capital

7.16 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.

7.17 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."*[66] In its RP3 business plan, NERL calculates an allowed regulatory return of £277 million over RP3. This is based on a real (in RPI terms) pre-tax WACC of 5.07%, lower than at RP2 (comprising 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.

7.18 We have reviewed a wide range of evidence to estimate an appropriate cost of capital for RP3, including:

- a report we commissioned from Europe Economics on NERL's cost of equity betas and cost of new debt;[67]
- recent market information and trends;
- recent UK regulatory precedent;[68]

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

[67] Europe Economics, Components of the Cost of Capital for NERL (December 2018).

[68] This includes including WACC ranges in Ofwat's PR19 guidance, Ofcom's business connectivity consultation and Ofgem's RIIO-2 consultation, and the recent UKRN cost of equity report.

- a report 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[69] with an update to this report that is being published alongside this consultation;[70]
- a report from CEPA commissioned by the International Airlines Group (IAG);[71] and
- information and supporting evidence provided by NERL.[72]

7.19 In summary, 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. We estimate 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.

7.20 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;
- further evidence on risks that NERL faces relative to the market that point to reductions in the required cost of equity;
- 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.

7.21 Appendix D provides more details on our approach to estimating the WACC. Table 7.4 below summarises the impact on NERL's allowances for regulatory return, calculated by applying the allowed pre-tax WACC of 2.84% (in RPI terms) to the average RAB. These allowances have reduced from £277 million in NERL's RP3 business plan to £149 million in our draft performance plan.

[69] CAP 1611 - PwC, Estimating the cost of capital for H7 (December 2017).

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

[71] CEPA, Cost of capital for NATS (En-Route) plc, November 2018

[72] 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).

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's RP3 business plan (RP3 WACC 5.07%)	59	56	57	49	55	58	58	57	277
CAA's draft proposals (RP3 WACC 2.84%)	59	56	56	27	30	31	31	30	149
Difference	0	0	-1	-23	-25	-27	-27	-27	-128

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

7.22 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.

7.23 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 the RP3 business plan.

7.24 In its RP3 business plan, NERL has assessed financeability 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

7.25 We have assessed financeability by using the similar credit metrics as NERL but have adopted a more focused approach to stress testing for these draft proposals. Our current view is that our assumptions with respect to NERL's Determined Costs are consistent with NERL's current strong 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 and other qualitative factors in reaching judgements on overall credit rating assessment and we have also considered the wider regulatory and business risks that NERL faces.

7.26 In our financial modelling, we have used a notional approach to gearing and dividends, consistent with our approach to estimating NERL's cost of capital. We have also assumed NERL's cost of new debt is consistent with the assumptions we have made in setting the cost of capital.

Approach to stress testing

7.27 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 have explored these matters by designing and selecting appropriate stress tests. NERL has an important role in being efficient and responding effectively to downside scenarios. 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 so that its long-term business prospects would remain strong.

7.28 We have identified two key business risk drivers – air traffic and opex (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.

7.29 In calibrating the air traffic stress test, we considered analysis provided by NERL and historical variations in air traffic, 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; and
- STATFOR's low and base traffic forecasts for years 2020 to 2024, which indicated a 5% reduction relative to the baseline.

7.30 Bearing the above in mind we have used 5% and 10% reductions in outturn air traffic in the stress tests, applied to each year of the RP3 control.

7.31 We adopted a similar approach to the operating costs stress test and 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.

7.32 Bearing the above we have increased outturn operating costs (excluding pensions) by 2.5% in a stress test, applied to each year of the RP3 control.

7.33 We have used these results to formulate the following scenarios for the purposes of stress testing:

- 10% reduction in actual traffic in all years of RP3; and
- 5% reduction in actual traffic and 2.5% increase in operating costs (excluding pensions) in all years of RP3.

CAA's assessment of financeability under stress testing

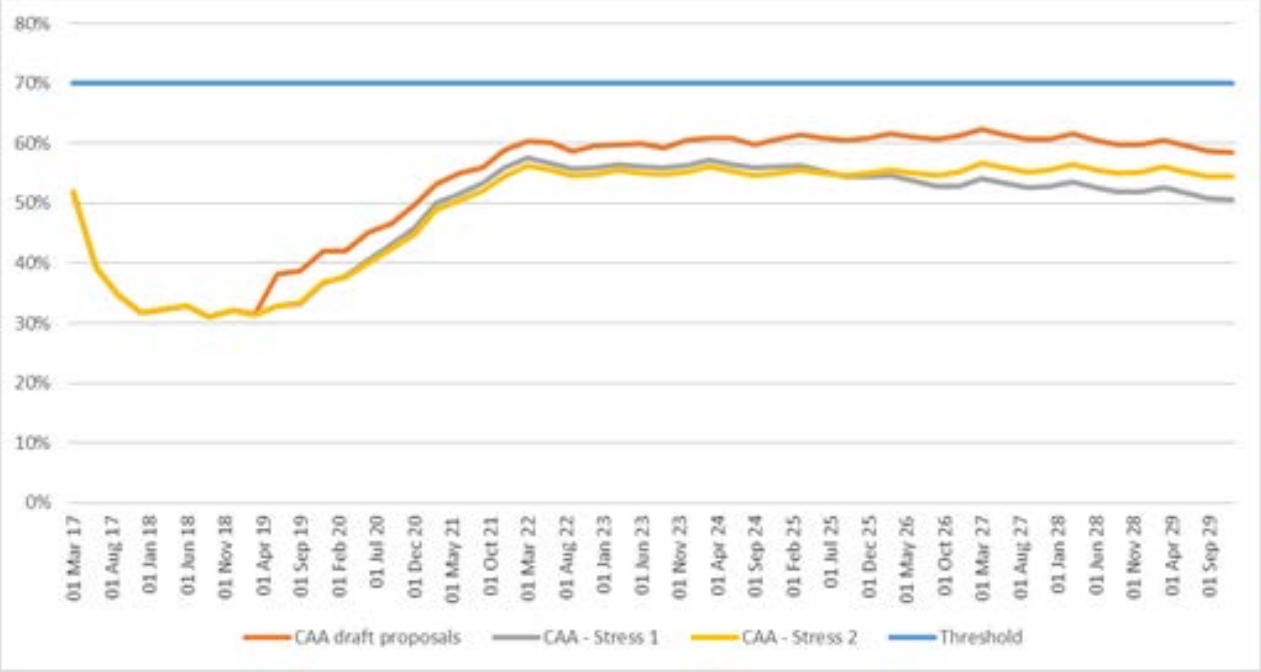
7.34 Our assessment of these scenarios reveals:

- 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 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;
- 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 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 base 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.

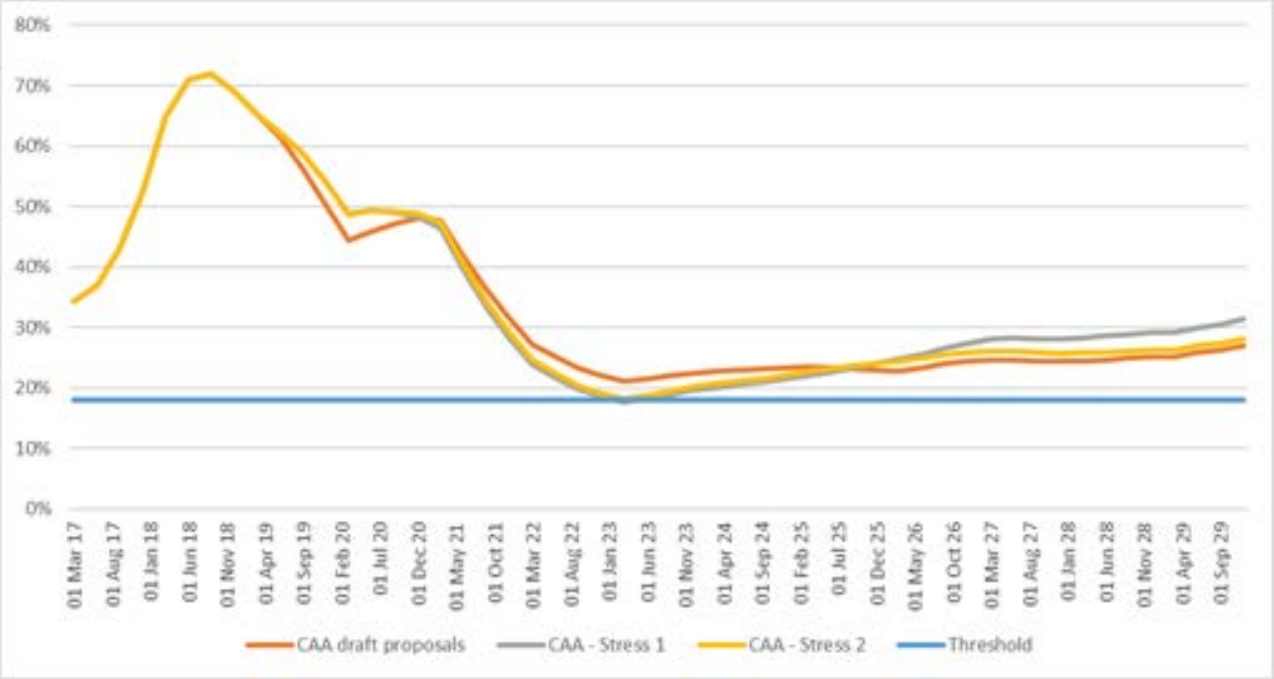
7.35 On this basis, we consider that our draft proposals are financeable and consistent with NERL retaining access to cost effective investment grade debt finance to support its investment programme. We do not consider it necessary to reprofile regulatory depreciation to deal with issues of financeability or affordability. Our approach to financeability testing is set out in more detail in Appendix C.

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

7.36 We have used NERL's RP3 financial model as the basis of our proposals and have engaged Grant Thornton to provide an independent review of the financial modelling and our stress tests.[73]

7.37 Grant Thornton raised various issues during its review that have been addressed by NERL or us. There remain a small number of outstanding issues that have not been resolved for these draft proposals, but these do not appear to have a material impact on the financial estimates in these draft proposals. We will work with NERL to resolve any remaining issues ahead of the final proposals.

Consultation questions

7.38 We would welcome views on any aspect of the issues raised in this chapter and, in particular, on our approach to the cost of capital and financeability.

[73] Grant Thornton, NATS Financial Model 2018 (January 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 is provided at each airport by an ANSP under contract with the airport operator) at five main London airports. The London Approach service was established to realise safety and capacity benefits of managing the congested London terminal airspace centrally.

8.2 The following airports are currently in scope of the London Approach service:

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

8.3 This chapter sets out our proposals for:

- including Biggin Hill Airport in the scope of the London Approach service;
- the approach to cost allocation that informs the setting of charges for the London Approach service; and
- how to best monitor NERL's performance in providing the London Approach service.

Addition of Biggin Hill Airport to the London Approach

8.4 Along with the five airports currently in scope of the London Approach service, 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 IFR 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.

8.6 We understand that Biggin Hill Airport receives an approach service that is operationally identical to London City, using shared equipment and resources. Biggin Hill 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 Biggin Hill has requested to be added to scope of regulated charges.[74] 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.[75]

NERL's proposals

8.8 NERL has 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 £100,000 per year of costs).

8.9 NERL's business plan states 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 proposes to continue billing Biggin Hill rather than individual aircraft that use the airport.

CAA's proposals

8.10 We have no evidence that including Biggin Hill in the scope of the London Approach service would distort competition. The services that NERL provides to London City and Biggin Hill appear similar and NERL has provided no evidence of a significant administrative burden of including Biggin Hill. Bearing these factors in mind our draft proposal is to include Biggin Hill in the scope of the regulated London Approach charge for RP3.

Cost allocations

8.11 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.

[74] See for example: Biggin Hill Airport Response to CAP 1511 (May 2017).

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

8.12 London Approach's operational characteristics have elements of both terminal and en route functions. In RP2 London Approach has been 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.

NERL's proposals

8.13 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's proposals

8.14 We have previously suggested there might be advantages in having a better separation of the terminal charge for the London Approach service.[76] Nonetheless, there would be a number of practical difficulties to overcome before such arrangements could be put in place:

a. the London Approach service may benefit users overflying Southern England, who would not be charged if the service is only a terminal charge; and

b. the current regulation does not provide for a separate charging zone that comprises both terminal and en route elements.

8.15 Bearing the above in mind we propose 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.

8.16 Table 8.1 below presents draft cost allocations to the London Approach services in RP3. We have updated the unit costs for STATFOR's October 2018 forecast of terminal service units, consistent with our approach to en route traffic, but have not reflected the impact of our changes to en route operating and capital costs. We will discuss final cost allocations with NERL and stakeholders ahead of the final proposals, including making changes to ensure consistency with our approach to en route costs and our final decisions on Biggin Hill.

[76] 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).

Table 8.1: Cost allocations to the London Approach service

	2020	2021	2022	2023	2024
DC nominal (£000)	13,911	13,833	14,870	15,191	15,830
Inflation index	1.07	1.09	1.11	1.13	1.16
DC real (£000)	13,022	12,695	13,379	13,400	13,690
STATFOR's Terminal service units (000)	1,013	1,032	1,048	1,065	1,079
Real DUCs in 2017 prices (£)	12.85	12.30	12.76	12.58	12.69

Source: CAA, STATFOR's September 2018 forecast

Reporting on NERL's performance

8.17 Our business plan guidance to NERL 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.

8.18 NERL's capacity and resilience to deliver the London Approach service came under scrutiny as part of Project Oberon,[77] 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).

NERL's proposals

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

a. the availability of the service for London Approach airports;

b. scheduled demand per hour compared to actual demand per hour; and

c. traffic growth per airport compared with agreed forecast.

CAA's proposals

8.20 We consider 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. By the start of RP3, we expect NERL to

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

engage with users during 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.[78]

Consultation questions

8.21 We welcome stakeholder comments on our proposals around the scope and performance metrics for the London Approach service.

[78] 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 This chapter deals with uncertainty mechanisms. A number of these derive from the performance regulation – including in relation to the traffic and cost risks faced by NERL. We have also developed draft proposals for additional measures with a focus on dealing with the uncertainties around the costs of airspace modernisation. Given the importance to users of airspace modernisation it is particularly important that there are appropriate funding arrangements as part of our work on the UK performance plan and NERL's price control.

9.2 Through the uncertainty mechanisms, risks are 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 its cost of capital and so its customers should directly benefit from this in terms of lower charges from NERL for the services it provides. Chapter 7 discusses our approach to the cost of capital.

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

9.4 This chapter is structured as follows:

- traffic risk;
- costs risk; and
- revisions to performance plans targets and re-opening NERL's price control.

Traffic risk

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

Risk sharing

9.6 Member States must apply a traffic risk sharing mechanism to share the impacts of variations between actual and forecast traffic volumes between the ANSP and users.

9.7 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. The traffic risk sharing mechanism limits NERL's exposure to this systematic risk, thus reducing its required cost of capital, which is beneficial to users since 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.

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

a. the ANSP bears all traffic risk when traffic varies within ±2% of the forecast used for RP3. This represents a deadband;

b. 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

c. users bear all incremental risk when traffic is more than ±10% of the forecast.

9.9 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. The default mechanism puts a maximum of ±4.4% of eligible revenue at risk.

9.10 The CCWG Co-Chairs' Report indicates 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.

9.11 We propose to retain the default 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 is unlikely to represent an efficient outcome for users, given the potential to increase NERL's required cost of capital.

Alert thresholds

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

a. deviation of actual traffic compared to the forecast in terms of IFR movements as well as service units; and

b. the variation in the Network Manager's Air Traffic Flow Management delay reference values which underpin the capacity KPI.

9.13 If an alert threshold were to be reached we would assess the situation, consider 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.

Costs risk

9.14 The measures prescribed by the performance regulation for sharing cost risks are described below. We then discuss the additional steps we propose to take for dealing with uncertain costs, with a particular focus on airspace modernisation.

Performance regulation cost risk sharing mechanism

9.15 The performance regulation provides for extensive risk sharing arrangements with respect to NERL's costs.[79] Nonetheless, NERL is incentivised to control its core operating costs – which are the largest component of its cost base. The risk sharing arrangements in the performance regulation include:

a. unforeseen changes in costs of new and existing investments;

b. unforeseen changes in costs of competent authorities, qualified entities and DfT (in respect of Eurocontrol);

c. 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;

d. unforeseen and significant changes in costs resulting from unforeseeable changes in interest rates on loans; and

e. 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.[80]

[79] Article 28 of the performance regulation.

[80] Article 28(3) of the performance regulation.

9.16 Where appropriate 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.

Uncertain costs

9.17 To support the delivery of national strategic objectives during RP3 it is necessary to make provision for costs where detailed strategy, policy and operational requirements are not well developed or are unknown at the time of adoption of the performance plan. In our business plan guidance to NERL we said that they 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.

9.18 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.

9.19 In its 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 the SIP governance mechanism.

9.20 Where appropriate, and consistent with the performance scheme, we would support this approach. We have therefore maintained a capital expenditure contingency allowance as proposed by NERL and agreed with airspace users through customer consultation. Use of the capital expenditure contingency will be subject to our proposed enhanced SIP governance requirements 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 (the CAA and DfT).

9.21 If, following Brexit, NERL was subject only to the Transport Act, we could consider development of the approach proposed by NERL for application in a broader range of circumstances, where it was consistent with both the achievement of national strategic objectives (like the implementation of the AMS) and with UK commitments under the Eurocontrol Multilateral Agreement relating to Route Charges. Alternatively, where supported, justified and subject to appropriate governance, we would consider formally agreeing to allow 'logging-up' of relevant additional costs, for recovery in subsequent reference periods.

9.22 In addition to these measures we propose two support funds for airspace modernisation, financed from NERL's and our own Determined Costs.

Opex Flexibility Fund

9.23 NERL has proposed an Opex Flexibility Fund (OFF) of £35 million (2017 prices) over RP3. The OFF would be similar in nature to the existing RP2 FAS Facilitation (NERL) Fund, but larger in scale (the RP2 fund is £15 million) and broader in scope.

9.24 NERL proposed that the OFF be used for additional opex:

- to deliver a project using a different mix of opex 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.

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

9.26 We expect 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 existing Investment Board.

9.27 We agree with this approach in principle, but recognise it is important to ensure proper linkages with, and where appropriate roles for, AMS governance. For example, we would expect the OFF's use to be developed through agreement with the CAA's Airspace Modernisation DMO team and, through that team, the co-sponsors of airspace modernisation (the CAA and DfT). We also expect 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 where NERL is not directly accountable. In such circumstances,

we propose that the DfT, as airspace modernisation co-sponsor and the public body responsible for the policy objectives of airspace modernisation, has a key decision-making role.

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

AMS support fund

9.29 As noted in chapter 6 (regarding our own airspace policy and regulation activities), we also propose to establish a support fund of £10m over RP3 with an explicit focus on airspace modernisation, financed from the CAA's Determined Costs. 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, it is intended that the AMS support fund will 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.

9.30 With the broader scope of the AMS, as compared to FAS, we expect the eligibility criteria for the AMS support fund 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. With the broader scope, we propose to increase the scale of the fund (the RP2 Small Gaps fund is £7.5 million). We also propose that the governance and decision-making arrangements for use of the AMS support fund are expanded and integrated with, or linked to, the overall AMS governance arrangements.

9.31 We will engage with stakeholders on the eligibility criteria, governance and decision-making arrangements for both the OFF and AMS support fund, to ensure there is sufficient clarity and shared understanding between stakeholders, prior to making our final proposals for the performance plan.

Revision of targets (price control re-opener)

9.32 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, including on investments, on which the performance target was set is, to a significant and lasting extent no longer accurate[81] due to unforeseeable circumstances and we have assessed that the effect cannot be mitigated, unless the performance target is revised.

9.33 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.

9.34 If, following Brexit, NERL is subject only to the Transport Act, the decision to re-open the price control will rest with the CAA. 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 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.

9.35 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.

Consultation questions

9.36 We welcome comments from stakeholders on the issues raised in this chapter and in particular whether our draft proposals create sufficient flexibility to allow for the efficient funding of airspace modernisation.

[81] It is our view that this criteria would apply to decisions stemming from a Competition and Markets Authority reference.

CHAPTER 10

Terminal 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. Recognising the potential for the development of competition to protect consumers, where market conditions exist in the provision of TANS services, the regulatory framework provides exemptions for TANS providers from certain regulatory requirements.

10.2 This chapter:

- discusses which airport TANS providers in the UK should be in scope of the performance scheme and the exemptions for market conditions; and
- summarises the approach to safety, environment, cost and capacity KPIs, including the CAA's proposals for capacity targets that will apply to TANS providers in scope of the performance scheme.

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. Table 10.1 below sets out the UK airports in scope for RP3.

Table 10.1: Average Annual Movements (2016-2018) at airports in scope of performance scheme for RP3

Airport	Average annual movements
Heathrow (LHR)	474,047
Gatwick (LGW)	279,082
Manchester (MAN)	189,969
Stansted (STN)	172,335
Edinburgh (EDI)	119,913
Luton (LTN)	104,585
Birmingham (BHX)	106,377
Glasgow (GLA)	86,025

Source: CAA

10.4 The threshold of IFR air traffic movements for inclusion in the scope of the performance plan for RP2 was 70,000. This means that in addition to the airports listed above, London City Airport (LCY) is in scope for RP2 and therefore currently included in Charging Zone B – the airports in scope of the RP2 performance plan. The average number of annual IFR movements for LCY over 2016 to 2018 was 78,388,[82] although we anticipate they will reach 80,000 IFR movements per year during RP3. We consider there are benefits of consistency for keeping LCY in scope of the Charging Zone B and therefore the performance scheme for RP3 and welcome any stakeholder views on this.

Exemption from SES performance and charging requirements

10.5 Article 35 of the performance regulation allows Member States to determine whether the provision of TANS, CNS, meteorological services for air navigation and aeronautical information services (AIS) or ATM data services are provided under market conditions. 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
- being subject to certain consultation requirements.

10.6 To determine 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.

[82] Source: 2016-October 2018 Avstats. November-December 2018 – OAG.

Development of competition and recent assessment

10.7 In late 2017 the DfT requested that we conduct an assessment of whether market conditions continued to exist in the UK TANS market.[83] We published our final advice confirming that market conditions continue to exist in April 2018.[84]

10.8 Since the previous assessment of market conditions, we conducted for DfT in 2015[85] ahead of RP2, we found further developments had taken place in the UK market , 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 Air Navigation Solutions Ltd (ANSL); and
- some airport operators were able to re-negotiate or extend contracts with existing service providers on more favourable terms.

10.9 On 25 May 2018 the DfT sent our assessment to the Commission and set out the UK intention not to calculate Determined Costs, set financial incentives or set terminal unit rates for TANS, in accordance with the provisions of the performance and charging regulations. At the time of drafting these proposals, the Commission has not identified any concerns with our assessment. We therefore do not propose any cost efficiency targets or financial incentives for TANS for RP3.

10.10 We do not consider that the changes to the assessment criteria in Annex X of the revised performance regulation are such as to affect our conclusion that the provision of UK TANS is subject to market conditions for RP3.

Safety

10.11 TANS providers are required to report their safety performance under EU regulations.[86] However, while the performance regulation requires TANS KPIs and PIs for safety to be reported at national level, it does not place specific

[83] Our assessment was conducted against the SES requirements in force at the time - Annex I of Commission Regulation 391/2013.

[84] CAP 1648 – Final Advice on Market Conditions for TANS in the UK (April 2018).

[85] CAP 1293 - Review of advice on SES Market Conditions for Terminal Air Navigation Services in the UK

[86] Commission Implementing Regulation (EU) No 1035/2011 of 17 October 2011, laying down common requirements for the provision of air navigation services (May 2015).

safety reporting requirements on TANS providers for the purpose of our annual monitoring report.

Environment

10.12 The environment KPIs are set and reported on at a national level. There are three environment PIs which have reporting requirements (but no targets set) at the airport level.[87] These are:

- additional time in the taxi-out phase;
- additional time in terminal airspace; and
- the share of arrivals applying CDO.

10.13 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.

Cost efficiency

10.14 As TANS have been assessed to be subject to market conditions, we do not propose setting cost efficiency targets or financial incentives for TANS in RP3.

10.15 Nonetheless, we will continue to report on cost efficiency on TANS in accordance with the performance regulation. The PI used for reporting is actual unit costs incurred by users, calculated annually for each calendar year and expressed in nominal terms in the national currency. We provide confidential reports to the Commission on cost data.

Capacity

10.16 The terminal capacity KPI is defined as follows: [88]

a. The average time, expressed in minutes, of arrival ATFM delay per flight attributable to terminal and airport ANS, calculated at local level as:

(i) the average arrival delay at the destination airport caused by ATFM regulations per inbound IFR flight;

[87] Annex I, section 2, 2.2(c), (d), (e) of the performance regulation.

[88] Annex I, section 2, 3.1(b) of the performance regulation.

(ii) all IFR flights landing at the destination airport and all ATFM delay causes, excluding exceptional events; and

(iii) for the whole calendar year and for each year of the reference period.

10.17 The performance regulation requires that the target is set at the national level and monitored at airport level. We have proposed an overall UK target but will report on performance on an airport by airport basis in our annual report.

10.18 We have assessed the RP3 business plan information from the TANS providers at the nine airports in scope –NSL, Birmingham Airport Air Traffic Ltd (BAATL) and ANSL. The table below summarises each airport's performance on the KPI from 2014 to 2017 and compares that against the forecast performance for RP3 as set out in the business plans. A weighted average is also shown.

Table 10.2: All causes ATFM delay at airports covered by ANSP business plans

Airport	Historic Average. (2014-2017)		Average RP3 Forecast Outcome	Indication of direction of performance
LHR	1.95		2.00	↑
STN	0.54		2.00	↑
LTN	0.43		1.00	↑
LCY	1.42		1.42	↔
MAN	0.24		0.32	↑
GLA	0.02		0.05	↑
LGW	1.84		2.85	↑
EDI	0.01		0.01	↔
BHX	0.09		0.14	↑
All Airports	**1.14**		**1.41**	↑

Source: CAA

10.19 TANS providers are in general predicting higher ATFM delays.

10.20 Table 10.3 below shows all causes ATFM delays in each year since 2014. Many of the airports within scope have seen increased delay over this period, particularly those which have also experienced significant increases in traffic.

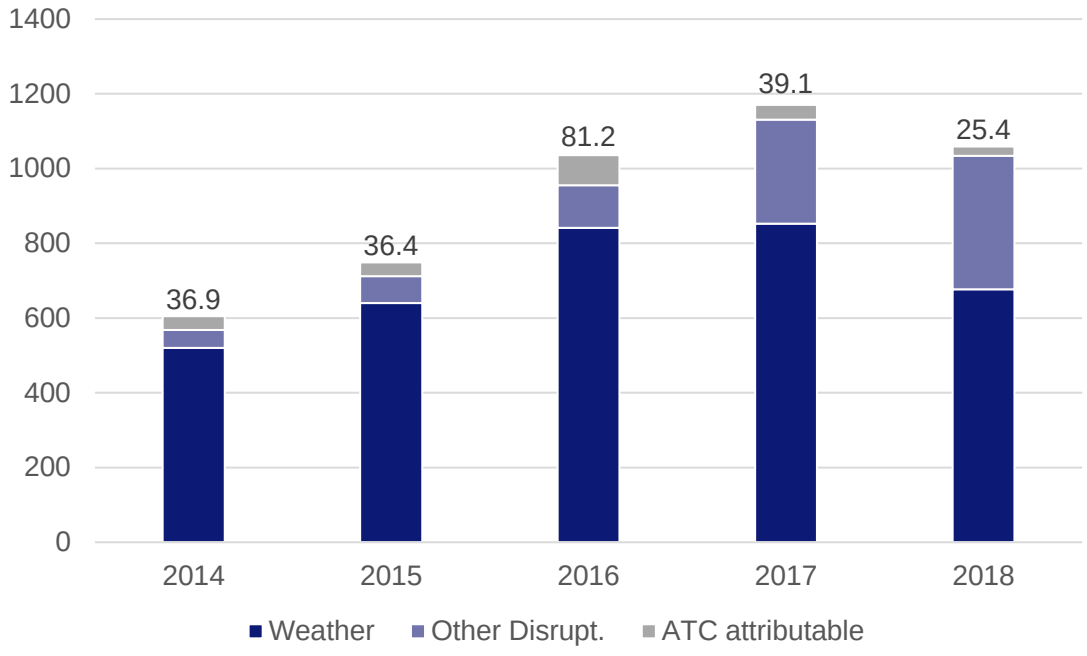
Table 10.3: All causes ATFM delay for the 9 airports in scope (minutes)

Airport	2014	2015	2016	2017	Historic Av. (2014-2017)	2018 to end Q3
LHR	1.89	2.12	1.86	1.92	1.95	1.18
STN	0.08	0.34	0.81	0.93	0.54	1.51
LTN	0.05	0.28	0.83	0.55	0.43	0.62
LCY	1.35	0.97	1.77	1.57	1.42	1.20
MAN	0.07	0.25	0.10	0.52	0.24	0.14
GLA	0.00	0.02	0.00	0.04	0.02	0.00
LGW	0.69	1.03	2.45	3.18	1.84	N/A
EDI	0.01	0.00	0.02	0.00	0.01	N/A
BHX	N/A	0.07	0.05	0.15	0.09	N/A
All Airports	**0.89**	**0.99**	**1.23**	**1.39**	**1.14**	**0.91**

Source: CAA

10.21 A further breakdown by cause of delay is shown in the figure below. We note that delay attributable to ATC represents a small part of total ATFM delay that is recorded. A significant proportion of delay is due to weather and over 2014 to 2017 weather delays have increased significantly.

Figure 10.1: Total Annual delay minutes by reason at the 9 airports covered by the regulation (000's).



10.22 TANS providers have identified the following initiatives in their business plans which are anticipated to impact on ATFM delays in RP3:

- ANSL – staffing strategies and participation in LAMP2;
- NSL –airspace change in the Essex airspace, due late 2020. Continued engagement with airports and with NERL on their initiatives; and
- BAATL – will investigate the use of new technologies in order to prioritise reduction of delay that is within its control.

CAA proposed targets

10.23 Without an established approach to forecasting ATFM delay, it is not straightforward to set targets for the future. Forecasts produced by STATFOR and the ANSPs both indicate growth in IFR movements that may put greater pressure on delays in the future. Nonetheless, the competitive market between TANS providers gives incentives to reduce delay and for partnership working with airport operators and the airline community.

10.24 Our proposed target for ATFM delay (see the table below) is based on the average delay performance for 2014-2017 for each airport within scope of the performance scheme. This takes into account the increasing pressures on performance and the importance of TANS providers taking steps to better manage delays in the future.

10.25 The traffic forecast for RP3 shows a higher growth rate at airports with a lower forecast delay, which leads to an overall reduction in average delay to 1.00 minutes per flight for RP3 in the UK FIR.

Table 10.4: Proposed target level of ATFM delay (minutes)

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**

Monitoring

10.26 The capacity KPIs for TANS that are to be monitored during RP3 are defined in the performance regulation as follows:[89]

a. the percentage of IFR flights adhering to their ATFM departure slots;

b. the average minutes of air traffic control pre-departure delay per flight caused by take-off restrictions at the departure airport; and

c. the average time, in minutes, of departure delay from all causes per flight, calculated from the average delay attributable to:

(i) delays due to airline operations;

(ii) en route ATFM delay reported by airspace users;

(iii) reactionary (knock-on) delay; and

(iv) 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.

Consultation questions

10.27 We welcome comments from stakeholders on the issues raised in this chapter including our proposal to retain London City in the scope of the performance scheme for the purposes of TANS and our proposed TANS capacity target.

[89] Annex I, section 3.2 of the performance regulation.

CHAPTER 11

Oceanic

Introduction

11.1 This chapter sets out our draft price control proposals for NERL's Oceanic service for the period 2020-2024.

11.2 These proposals fall 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).[90]

11.3 This chapter has the following structure:

- introduction to NERL's Oceanic services and its price control arrangements;
- NERL's proposals for satellite ADS-B services;
- price control building blocks; and
- key questions for consultation.

NERL's Oceanic service

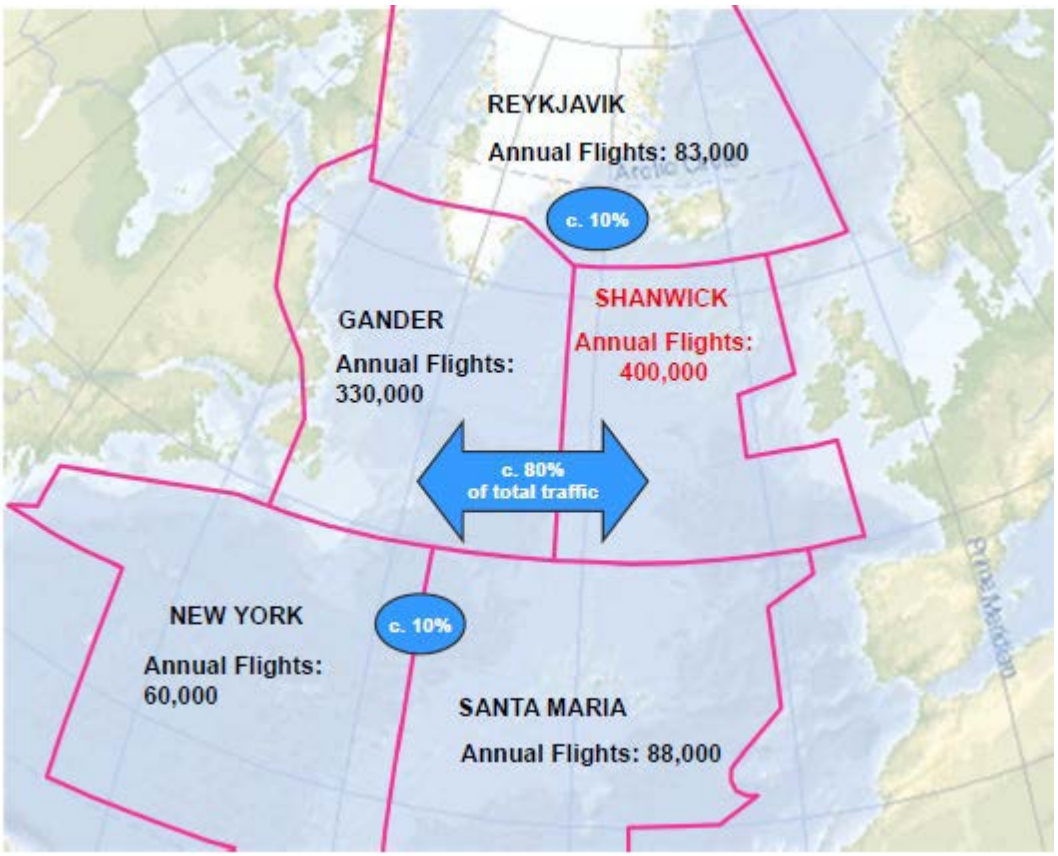
11.4 As shown in Figure 11.1, there are five Oceanic Control Areas across the North Atlantic.[91] The management and development of this airspace is governed by ICAO through the North Atlantic System Planning Group (NATSPG) and subgroups. The majority of flights (c.80%) are handled by a combination of 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.

[90] 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.

[91] 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 Oceanic 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. 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.

11.7 Table 11.1 shows traffic through the Shanwick airspace so far in the 2015-2019 control period against the forecast used to inform the current price control. It also shows the actual costs NERL has incurred against the allowances set in our Oceanic RP2 decision. To date in RP2, traffic has significantly out-stripped forecasts and NERL has outperformed its costs targets.

Table 11.1: NERL's Oceanic performance in RP2

	2015	2016	2017	2018	2019
Traffic forecast (000s)	412	420	426	433	439
Actual traffic (000s)	438	473	495	N/A	N/A
Difference between actual and forecast traffic (%)	**6.3**	**12.6**	**16.2**	**N/A**	**N/A**
CAA's Determined Costs (£m 2017 prices)	26.8	26.0	25.3	24.4	23.9
Actual costs* (£m 2017 prices)	26.3	25.6	23.8	N/A	N/A
Difference between actual and forecast costs (%)	**-1.9**	**-1.5**	**-5.9**	**N/A**	**N/A**
Average RAB (£m Outturn)	33.6	34.8	37.3	N/A	N/A
Outturn return on the RAB (%)	**15.17**	**18.58**	**21.63**	**N/A**	**N/A**

Source: CAA *Values for the depreciation of the regulatory asset base (RAB) and cash pension contributions for the RP2 period reflect the allowances/assumptions made by the CAA

11.8 If adopted, the proposals set out in this chapter will be included in a new charge condition in NERL's licence that will apply for the five years from 1 January 2020 to 31 December 2024.

11.9 In setting out the proposals for the Oceanic service, we have considered the following information:

- NERL's RP3 business plan;
- additional information provided by NERL, specifically in relation to our letters to NERL in May[92] and September 2018;[93]
- the CCWG Co-Chairs' Report and views expressed by users over the course of NERL's customer consultation on its business plan[94] and subsequently submitted to us; and
- CAA-commissioned consultants' studies – specifically on cost assessment,[95] cost allocation[96] and the cost of capital.[97]

[92] CAA, Letter to Martin Rolfe (25 May 2018)

[93] CAA, Letter to Martin Rolfe (25 September 2018)

[94] The CAA attended, as an observer, 4 workshops on the Oceanic service led by NERL. This includes dedicated technical workshops on the costs of the ADS-B service and the benefits of the service.

[95] Steer/Helios, NERL's forward-looking capital programme and expenditure efficiency (September 2018).

[96] CEPA, NERL's Cost Allocation and Non-Regulatory Income Forecasts (January 2019).

[97] Europe Economics, Components of the Cost of Capital for NERL (December 2018).

NERL's proposals to introduce satellite-based ADS-B services

NERL's proposed approach to delivering the service in RP3

11.10 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.

11.11 NERL's proposals for delivering the Oceanic service in RP3 include 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. This would improve flight efficiency, increase capacity and ensure a safe operating environment. This would benefit airlines, and their passengers, through lower costs and potential for more choice through additional flights.

11.12 NERL estimates the proposed introduction of ADS-B would increase the cost of the Oceanic service by approximately £31 per flight. For a typical North Atlantic crossing, this would mean around a 60% increase above the charge levied in RP2.

11.13 NERL also proposes to charge for the ADS-B service separately from the Oceanic charge and to apply a true-up mechanism, in which any over- or under-recovery of revenues relative to NERL's ADS-B costs due to higher- or lower-than-forecast traffic volumes would feed through into a lower or higher charges in year n+2.

11.14 Under NERL's proposals a separate ADS-B charge would apply to 'Tango' routes in the south-eastern corner of Shanwick (primarily flights to and from the Canary Islands) due to the availability of alternative ground based surveillance technology options.

NERL's estimated costs and benefits

11.15 NERL's 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. Instead, NERL's analysis may best be considered an attempt at viewing the ADS-B proposal from a user's perspective, as it focuses on the fuel savings that could be achieved by introducing ADS-B and related changes over the North Atlantic.

11.16 NERL also stated that introducing ADS-B is required for it to meet the ICAO (safety) standard in Shanwick in the context of continuing traffic growth, but it did not estimate the monetary value of meeting the safety standard.

11.17 NERL estimated four sources of fuel savings for airlines as a result of the proposed introduction of ADS-B:

- improved separation standards as a result of enabling advanced surveillance enhanced procedural separation (ASEPS);
- removal of speed restrictions as well as giving pilots more flexibility to control the desired speed to achieve optimal fuel savings;
- user preferred routes (UPR) – from year 2023; and
- lower fuel uplifts for contingency purposes.

11.18 NERL compared the estimated fuel savings from the above sources against forecast ADS-B operating costs. Its analysis is summarised in Table 11.2, which shows figures for a typical North Atlantic crossing (i.e. covering both the Shanwick and Gander airspaces).

Table 11.2: NERL's estimated fuel savings from the introduction of ADS-B

Saving / cost per flight	2020	2021	2022	2023	2024
ASEPS (kg)	85	85	85	85	85
Variable Mach / cost index (kg)	237	237	237	237	237
Avoided fuel uplift (kg)	84	84	84	84	84
UPR savings (kg)	N/A	N/A	122	243	243
Total savings (kg)	406	406	528	649	649
Cost saving at fuel cost of US$700/mT (US$)	284	284	370	454	454
Estimated ADS-B data charge (US$)	110	110	110	110	110
Estimated net saving per flight (US$)	**174**	**174**	**260**	**344**	**344**

Source: NERL

11.19 We note that the above figures do not include the capital expenditure associated with introducing ADS-B (i.e. £15 million in NERL's business plan).

Airlines' views on NERL's costs and benefits

11.20 The CCWG Co-Chairs' Report noted that there were 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 UPR benefits are realisable in practice, given the operational change management challenges.

11.21 In addition, airlines generally noted that they felt that NERL's Oceanic plan was determined without regard to their views and concerns.[98] The CCWG Co-Chairs' report also noted that no agreement for the basis of charging for the service has been reached, although airlines have said they do not want to see the application of any weight by distance-based charge or by hour.

11.22 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 these draft proposals, no such analysis has been made available to us by users or their representatives.

ICAO's estimated costs and benefits

11.23 ICAO was approached by Nav Canada to consider the ADS-B business case over six of the Oceanic control areas in the Atlantic.[99] The period of ICAO's analysis covered the timeframe from 2019 to 2033. From costs perspective, the study focused on ADS-B signal fees and required investment in ATM infrastructure, but also considered costs related to airlines equipage (concluding that these are negligible). The study concluded that, based on ICAO's NAT ADS-B concept of operations, there is an NPV benefit of US$168 million (in 2016 prices) for the six areas over the timeframe in question. On a per-flight basis, this is smaller than NERL's estimated benefits, although the net benefits remained positive.

The CAA's view

Assessment of costs and benefits

11.24 We conducted a simplified cost-benefit analysis of NERL's proposal. The analysis:

- only covers the RP3 period; and
- the starting point for estimated costs and benefits is the information in NERL's business plan. In particular, the analysis uses NERL's estimated fuel saving benefits as set out above as well as its assumption that the introduction of ADS-B would allow NERL to meet the ICAO safety standard in the circumstances of forecasts that indicate increasing air traffic movements in the future.

11.25 Our analysis includes a number of important differences from NERL's estimates:

[98] IATA response to NERL RP3 business plan, p.2.

[99] 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).

- the analysis compares total costs[100] related to the ADS-B proposal and total estimated benefits in the Shanwick airspace, whereas NERL's analysis compares per flight costs and benefits. Total costs and benefits are derived using NERL's Oceanic traffic forecast for RP3;
- £15 million of capital expenditure costs related to the implementation of ADS-B is included in the analysis;[101]
- fuel saving benefits are estimated using a conservative assumption in which fuel costs are 60% lower than NERL's estimate. This provides a stress test of the estimated benefits for a situation in which fuel prices drop materially during RP3;
- the benefits of avoided fuel uplift are assumed to only come into effect one year after the introduction of ADS-B. This is to reflect feedback from users that they would not reduce fuel uplift until there is a year's worth of evidence of fuel savings being achieved; and
- an estimate of the possible safety benefits of introducing ADS-B. While existing operating procedures across the North Atlantic have proved safe there would be advantages in ADS-B, particularly in the context of forecasts of continuing growth in air traffic in the future. There are a number of ways of estimating these benefits and for the purposes of this analysis we have chosen an approach based valuing the reduction in accidents that could be associated with introducing ADS-B. [102]

11.26 The above changes mean that the costs related to the ADS-B proposal are fully reflected in the analysis and that a prudent view is taken of the benefits that may be achieved. Therefore, our analysis represents a conservative view of whether the ADS-B proposal is likely to result in net benefits to users.

11.27 Table 11.3 summarises the costs and benefits we have estimated. When taken together the safety and efficiency benefits indicate that there would be advantages to users in developing ADS-B.

[100] The analysis presents costs and benefits in terms of British Pounds Sterling, whereas NERL's analysis was in US Dollar terms.

[101] These costs are assumed to be profiled equally across the number of years identified by NERL before the associated capability becomes usable.

[102] We have used an estimate of improvement in accidents per flight hour, NERL's forecast for the number of flights in Shanwick during RP3 that would be using ADS-B, and the value of preventing these accidents based on a report by the Rail Safety and Standards Board, Taking Safe Decisions – safety-related CBA.

Table 11.3: CAA estimated costs and benefits from the introduction of ADS-B

(£m, 2017 prices)	2020	2021	2022	2023	2024
Total ADS-B data costs	19.2	19.5	20.0	20.5	20.9
Total ADS-B related capital expenditure	0.6	1.9	2.3	2.3	2.3
Total costs	**19.8**	**21.4**	**22.3**	**22.8**	**23.2**
Estimated total fuel savings	16.9	21.6	28.8	36.3	36.9
Estimated total safety benefit	4.0	4.1	4.2	4.3	4.4
Estimated total benefits	**20.9**	**25.8**	**33.0**	**40.6**	**41.3**
Estimated net benefit	**1.1**	**4.3**	**10.8**	**17.8**	**18.1**

Source: CAA

Risk allocation

11.28 NERL has said that its contract with the provider of the ADS-B service, Aireon, would entail the payment of a fixed annual sum. NERL has 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 would mean 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 (non-ADS-B related) costs of the Oceanic service for example, other operating and capital expenditure).

11.29 Another option would be to introduce a traffic risk sharing mechanism into the Oceanic price control. Such a mechanism could be the same or similar to the traffic risk sharing that applies to the domestic en route service, as described in detail in chapter 9.

11.30 We are interested in stakeholder views as to whether a traffic risk sharing mechanism should be introduced for the Oceanic service.

Investment in Aireon

11.31 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 raises concerns over a potential conflict of interest given its potential role as provider of ADS-B services to NERL.

11.32 The concern arises from NATS effectively sitting on "both sides of the transaction" for the provision of ADS-B services over the North Atlantic. We have challenged NATS to demonstrate that appropriate ring-fencing arrangements are in place as regard to NERL and NSL's relationships with Aireon.

11.33 NERL's business plan states that governance was applied throughout the acquisition 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.

11.34 Our regulatory framework provides for ring-fencing arrangements between NSL and NERL. We will continue to monitor the ring-fencing arrangements and propose to introduce additional governance and performance monitoring of the Oceanic charges, as discussed below.

Governance and performance monitoring

11.35 Moving to an ADS-B-based service for Oceanic would represent a significant cost increase (see next section for further detail). 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 propose to strengthen the existing governance arrangements that apply to the Oceanic service.

11.36 We will require the NATS Board to certify that it is operating a fully ADS-B-based service for its Oceanic airspace. Without such certificate being presented, NERL would not be permitted to recover the allowed ADS-B costs through the Oceanic charge.

11.37 Additionally, it is important that stakeholders understand the service improvements that are achieved by deploying ADS-B. Condition 11 of the NERL licence requires NERL to report (at least every six months) on its performance, based on a set of measures agreed with users. We expect NERL to work with users to agree a set of reporting criteria for Oceanic that would be reported in accordance with Condition 11. At a minimum, we would expect the semi-annual reports to cover the benefits achieved regarding:

- safety;
- speed restrictions;
- flight trajectory;
- ASEPS implementation; and
- estimated fuel savings.

11.38 For the avoidance of doubt, we do not propose to introduce financial incentives on NERL's performance against any of the above measures in RP3. This is because the service would be provided in a new way, and further evidence is required to establish what represents an appropriate and achievable target level of performance.

11.39 Once the ADS-B-based service has been operational for some time we would look to NERL to verify that the benefits derived from ADS-B have indeed exceeded the incremental costs recovered from users. Subject to appropriate governance, we propose that NERL will conduct a review of the benefits two years after the introduction of ADS-B. The objective of such review will be 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.

11.40 If NERL is 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.

Oceanic price control building blocks for RP3

11.41 Our method for calculating the Oceanic price control mirrors the method for calculating NERL's en route price control. This section sets out each regulatory building block that makes up the maximum allowed charge for the Oceanic service in RP3.

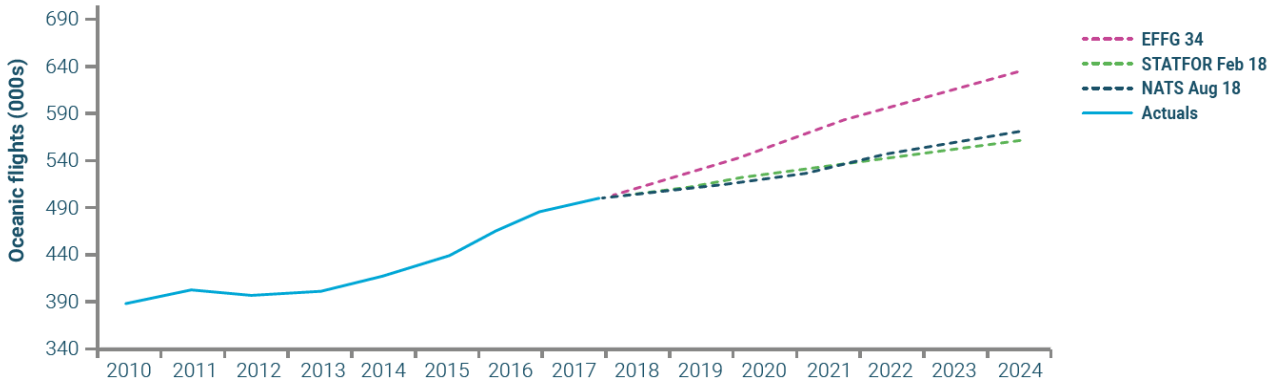
Traffic forecasts

11.42 NERL's business plan Oceanic traffic forecast was built as follows:

- transatlantic arrival and departure flows to and from the UK are forecast from passenger demand using the same methodology as for the UK airspace;
- transatlantic UK overflights are forecast using trend analysis from historical data; and
- flights that do not enter the UK are forecast using STATFOR growth rates.

11.43 NERL's forecast is shown in Figure 11.2 and compared to alternative sources of forecasts. It should be noted that STATFOR does not publish a dedicated Oceanic forecast and the STATFOR forecast presented in the figure below was derived by NERL using STATFOR's Europe to North America forecasts (so excludes flights that do not enter Europe).

Figure 11.2: Oceanic traffic forecasts



Source: NERL

11.44 NERL's forecast is close to that of STATFOR, but there is a substantial difference relative to ICAO's North Atlantic Economic Financial and Forecast Group (NAT EFFG) forecast. We note that NERL considers its forecast to be based on a more established methodology than NAT EFFG and that it relies on a more detailed methodology than STATFOR.

11.45 Given the similarities between the NERL and STATFOR forecasts and considering Oceanic control is treated entirely outside of the European performance framework, we propose to accept NERL's forecast for the purposes of setting maximum charges for RP3. Table 11.5 sets out the traffic forecasts.

Table 11.5: Oceanic traffic forecast for RP3

	RP2					RP3				
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Actual	Actual	Actual	F'cast	F'cast	F'cast	F'cast	F'cast	F'cast	F'cast
Total Oceanic flights (000s)	438	473	495	508	513	524	533	546	559	569

Source: NERL

Operating costs (excluding depreciation and pensions)

11.46 The single largest item in NERL's current Oceanic operating cost is staff costs. NERL proposed in its business plan to increase the number of ATCOs over the RP3 period to accommodate increases in traffic volumes over the North Atlantic. NERL forecast an increase of staff related costs of about £1 million (2017 prices).

11.47 For RP3, the primary source of non-staff opex is the cost of ADS-B services to be commissioned from Aireon. NERL's business plan identifies Aireon's charge as US$40 per flight hour. We have converted this unit charge into a total cost figure using the traffic forecasts shown above, and an exchange rate of

US$1.4/£1. The latter reflects the exchange rate futures for the midpoint of RP3 at the time of preparing this consultation.[103]

11.48 We have also made similar assumptions on efficiency as for NERL's en route price control:

- assumption of 2.3% per year has been applied to RP3 staff opex; and
- both ADS-B data charge and non-staff opex have been reduced by 5%. This reflects a broad estimate of both the potential for efficiency gains relating to capital investment and the uncertainty associated with the lack of benchmarking information from NERL to properly justify the prices in its contract with Aireon.

11.49 The impact of these assumptions is shown in table 11.6 below.[104]

Table 11.6: Operating costs

(£m, 2017 prices)	2020	2021	2022	2023	2024
NERL RP3 Business Plan staff opex	11.7	12.2	12.6	12.5	12.0
CAA view staff opex	11.6	11.9	12.2	12.0	11.3
Difference – staff opex	**-0.1**	**-0.3**	**-0.4**	**-0.6**	**-0.7**
NERL RP3 business plan non-staff opex	5.2	5.4	5.5	5.2	5.1
CAA view RP3 business plan non-staff opex	4.9	5.2	5.3	5.0	4.8
Difference – non-staff opex	**-0.3**	**-0.3**	**-0.3**	**-0.3**	**-0.3**
CAA view ADS-B costs (incl. Tango)[1]	14.6	14.8	15.2	15.5	15.7
CAA view – total opex	**31.1**	**32.0**	**32.6**	**32.5**	**31.8**

Source: CAA

Note: [1] Note that the figures in this row represent the CAA's view of efficient ADS-B opex (i.e. data costs). This is different to the first row in Table 11.3, which shows a conservative (i.e. high) view of ADS-B opex as part of the simplified cost-benefit analysis.

Pensions

11.50 We have made similar adjustments to NERL's Oceanic pension costs as we have for its en route pension costs (as explained in chapter 5). The forecasts in NERL's business plan and the assumptions we have made in these draft proposals are summarised in the table below.

[103] A typical flight time in Shanwick of 1.1 hours is assumed.

[104] Exceptional costs and other income are shown in Table 11.12.

Table 11.7: Pension costs

(£m, 2017 prices)	2020	2021	2022	2023	2024
NERL RP3 business plan pensions	3.7	3.7	4.0	3.5	2.7
CAA view pensions	3.7	3.6	3.1	2.7	2.6
Difference – pensions	**Nil**	**-0.1**	**-0.9**	**-0.8**	**-0.2**

Source: CAA

Capital expenditure

11.51 NERL's capital costs in RP3 relate to mainly (£15m out of a total of £18 million) to new systems required to manage the Shanwick airspace with ADS-B.

11.52 There was limited justification in NERL's business plan for its Oceanic capital programme. In the light of this we have made the same 5% adjustment as to non-staff operating costs. These adjustments are summarised in the table below.

11.8: Capital expenditure

(£m, 2017 prices)	2020	2021	2022	2023	2024
NERL RP3 business plan capital expenditure	4.6	2.6	5.6	1.6	3.4
CAA view capital expenditure	4.4	2.5	5.3	1.5	3.2
Difference – capital expenditure	**-0.2**	**-0.1**	**-0.3**	**-0.1**	**-0.2**

Source: CAA

RAB and depreciation

11.53 The RAB is a measure of the amount invested in NERL's Oceanic business that has yet to be returned through revenue allowances. It, therefore, represents the capital employed after regulatory depreciation. The RAB is indexed by inflation (using RPI).

11.54 At the start of RP2, the Oceanic RAB was £34 million (nominal). During RP2 we have allowed £15 million in costs related to the Stamper and Telstar programmes, which would then be recovered through charges starting in 2020.

11.55 Table 11.9 sets out projections of NERL's RAB given our assumptions on capital expenditure.

Table 11.9: Assumptions on the Oceanic RAB

(£m, Nominal prices)	2020	2021	2022	2023	2024
Opening RAB	48.8	46.9	44.5	45.4	42.4
RAB additions (capital expenditure)	4.8	2.8	6.0	1.8	3.8
Regulatory depreciation of the RAB	-7.5	-6.4	-6.1	-6.3	-6.7
Real movement in working capital	-0.7	-0.3	-0.4	0.2	-0.1
Inflation adjustment	1.5	1.5	1.5	1.4	1.3
Closing RAB	46.9	44.5	45.4	42.4	40.7
Annual average RAB*	**47.6**	**45.5**	**44.8**	**43.7**	**41.3**

Source: CAA. * Includes inflation adjustment to opening and closing RAB.

Cost of capital

11.56 NERL is financed on a company-wide basis and the cost of capital has been assessed on that basis. We have in previous control periods applied a single cost of capital to both price controls and propose to continue to do so for RP3.

11.57 Consistent with the approach to the en route price control we propose to apply a pre-tax real cost of capital of 2.84% in calculating the Oceanic price control. The rationale for this value is set out in detail in chapter 7. Table 11.10 sets out the return on capital that NERL would earn in RP3 for its Oceanic services using our proposed cost of capital.

Table 11.10: Return on Oceanic RAB

(£m, Prices as indicated)	2020	2021	2022	2023	2024
Average RAB (Nominal)	47.6	45.5	44.8	43.7	41.3
Rate of return (pre-tax real)	2.84%	2.84%	2.84%	2.84%	2.84%
Regulatory return on RAB (2017)	**1.3**	**1.2**	**1.1**	**1.1**	**1.0**

Source: CAA

Profiling of charges

11.58 We have adopted a smoothed approach at previous Oceanic reviews, but not for the UK en route charges. This is because the SES regulation that applies to UK en route prescribes an approach that does not provide for a deviation from applying Determined Costs and forecast traffic on an annual basis.

11.59 For RP3 NERL has proposed that profiling is not applied. We understand that NERL's proposal is because of the ADS-B costs, and NERL's pass-through proposal, could create fairly large year-on-year changes in Oceanic charges.

11.60 We are interested in stakeholders' views on whether Oceanic charges should be profiled or not. If charges were to be profiled we would expect the NPV of

forecast profiled charges to be the same as the NPV of forecast unprofiled charges.

Tango routes

11.61 For RP3 NERL has proposed to introduce two charge rates – a charge for using the main Shanwick airspace that reflects the full cost of ADS-B services, and a smaller charge for using the South East corner of Shanwick. The latter is intended to reflect the potential to provide ATM services in the south-east corner through alternatives to ADS-B.

11.62 NERL's licence is currently drafted such that the price control that we set (whether profiled or not) represents a limit on average charges levied by NERL for its Oceanic service.

11.63 We therefore propose to clarify NERL's licence obligations so that any such differential charges should reflect the differences in the cost of providing air traffic services within its Oceanic activities.

Summary

11.64 Table 11.12 summarises our proposals on the building blocks on the Oceanic control for RP3. These include two additional blocks (Exceptional Items and Other Income) to fully illustrate the charging calculation.

11.65 For the purpose of the building blocks we have not distinguished between ADS-B costs that NERL may decide to attribute to the main Shanwick airspace and those that it may attribute to Tango routes.

Table 11.12: Summary of the CAA's view on building blocks for RP3

(£m, 2017 prices)	2020	2021	2022	2023	2024
Operating cost (staff and non-staff)	16.5	17.1	17.4	16.9	16.1
ADS-B costs (incl. Tango)	14.6	14.8	15.2	15.5	15.7
Exceptional Items	0.1	0.1	0.1	0.1	0.1
Pensions	3.7	3.6	3.1	2.7	2.6
Other Income	-0.6	-0.6	-0.6	-0.5	-0.5
Regulatory depreciation	6.9	5.8	5.4	5.4	5.7
Return on RAB	1.3	1.2	1.1	1.1	1.0
Total costs incl. ADS-B	**42.4**	**42.0**	**41.8**	**41.2**	**40.7**
Traffic forecast ('000s)[1]	524	533	546	559	569
Unprofiled charge per flight (£)[2]	**80.9**	**78.8**	**76.4**	**73.7**	**71.5**

Source: CAA.

Notes: [1]Traffic forecast figures includes both Tango and North Atlantic traffic. 2No distinction is made between ADS-B costs that are attributed to the main Shanwick airspace and those that are attributed to Tango routes.

Consultation questions

11.66 We welcome stakeholders' views on any of the issues discussed in this chapter. In particular, stakeholders are encouraged to comment on:

- the approach to determining the building blocks and the proposed values of those building blocks;
- the decision to reject NERL's proposal of a pass-through approach ADS-B data costs to users;
- the proposed governance and performance monitoring arrangements regarding the costs and benefits of ADS-B; and
- whether the Oceanic price control should have a traffic risk sharing mechanism and whether Oceanic charges should be profiled or not.