NATS (En Route) plc price control review for control period 3 (2011-2014): Implications of SES II

CAA Consultation
July 2010

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1. Introduction

Purpose of this document

1.1 In May this year the CAA published its proposals for the NATS (En Route) plc (known as NERL) control period 3 (CP3) price control. The purpose of that document was to set out, and invite views on, the CAA's proposals for the price control that will be put in place from 2011 onwards. The May 2010 document noted that some aspects of the proposed regulatory framework were necessarily provisional because the proposals would be influenced by the modified EU Charging Regulation as part of the Single European Skies (SES) II legislation[1].

1.2 The proposals in the May document took account of the emerging discussions on the Charging Regulation, which at that time were on-going. The text for amendment to the Charging Regulation 1794/2006 (referred to here as the revised Charging Regulation) was subsequently agreed by the Single Sky Committee (the comitology committee) in July 2010. It is now subject to scrutiny by the European Parliament (from 23 August to 22 September) and then to approval by the College of European Commissioners (from 23 September to 13 October). It will simultaneously be subject to legal and translation scrutiny by EU services and may be published in the Official Journal of the European Union (OJEU) before the end of October; it will come into force 20 days after that publication. Therefore, while the revised Charging Regulation has yet to be finally ratified, this document updates the CAA's May 2010 proposals by setting out the CAA's analysis of the areas where the requirements of the SES II regime as currently understood are consistent with, or where they require modification of, the CAA's proposals for CP3. This update should be read together with the May document.

1.3 This document also sets out the draft licence conditions relating to the price control proposals that would apply from the start of CP3. These reflect the position as set out in the CAA's May 2010 document which in some areas is updated by this document to reflect developments under SES II. The SES II arrangements apply only to NERL's Eurocontrol business and do not impact the Oceanic price control which does not fall within the jurisdiction of the EC.

Structure of this document

1.4 The structure of this document is as follows. Chapter 2 examines the impact of the revised Charging Regulation on the scope and structure of the price control as set out in the CAA's May 2010 document. Chapter 3 provides some commentary on the draft licence conditions. Annex A contains the text of the revised Charging Regulation. Annex B provides more detailed analysis of the CAA's CP2 traffic risk sharing arrangements and those now required by SES II. Annex C sets out the draft licence conditions in full and Annex D updates the Regulatory Policy Statement for the latest changes. Annex E sets out the

[1] The SES II is a European Commission initiative by which the design, management and regulation of airspace will be co-ordinated through the European Union.

approach envisaged for the tax claw back on gearing exceeding the 60 percent target.

Views invited and next steps

1.5 The CAA welcomes comments on the proposals set out in this document as well as on the May 2010 document. Any comments should be sent, if possible, by e-mail to kathryn.hodgson@caa.co.uk by **27 August 2010**. Alternatively, they may be posted to:

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CAA House
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1.6 The CAA expects to make responses available on its website for other interested parties to read. Any confidential material should be clearly marked and included in a separate annex, which subject to further discussion with the author, will not be published.

1.7 The CAA proposes to conduct oral hearings on 7 September 2010 (with 10 September held in reserve if hearings are not completed on 7 September) once it has received and published the written responses to this consultation. Additionally, the CAA has agreed to hear bmi on 16 September at bmi's request. Other interested parties will be able to attend this hearing. Written responses should therefore indicate whether parties wish to make oral representations at the hearings. Once the CAA has received and considered all requests to be heard it will announce which parties it has decided to hear and the more detailed arrangements for the oral hearings.

1.8 As stated in May, the CAA will take all responses to this document, including the output from the oral hearings, into account as it develops its formal proposals for modifications to NERL's Licence in accordance with section 11(2) of the Transport Act 2000. The timetable for the remainder of the review is set out in the May 2010 document.

2. SES II revised Charging Regulation

Introduction

2.1 Chapter 4 of the May 2010 document set out the significant bearing that the SES II requirements were likely to have on the structure of the CAA's proposed price controls. The SES II requirements are being implemented through:

- the Performance Scheme Regulation; and
- the revised Charging Regulation.

2.2 The Performance Scheme Regulation had already been agreed at the time of the CAA's May 2010 document and its implications were incorporated therein.

2.3 The Performance Scheme Regulation will lead eventually to the setting of EU-wide targets for each of the key performance areas (KPAs): namely, safety, environment, capacity and cost efficiency. Individual National Supervisory Authorities (NSAs) will have to develop national performance plans that are consistent with EU-wide targets. The Regulation sets the first review period (RP1) as 2012-2014. In order that CP4 can be aligned with the second review period (RP2) the CAA in May proposed that CP3 should last four (2011-14) rather than five years.

2.4 As the May document also explained, the timetable for implementing the Performance Scheme Regulation and the revised Charging Regulation means that the cost and performance targets at the EU level will not be known at the point at which the CAA makes its determination for CP3. It is the CAA's intention to set a determination for CP3 which is consistent with the requirements of SES II and represents, in the CAA's view, the appropriate degree of challenge across the relevant metrics to NERL over CP3 (which includes RP1). The CAA, therefore, anticipates that the final decision it makes in December 2010 will represent NERL's contribution to the UK's national plan for RP1.

2.5 Given the extent of its examination of and consultation on NERL's plan, the CAA does not anticipate a discrepancy between the CP3 determination and what may be required by SES II. In the event, however, that the UK were to be required to impose more stringent targets this could necessitate a reopening of the price control. The CAA can only revise NERL's licence either with its agreement or following a reference to the Competition Commission.

2.6 As set out in 1.2, the revised Charging Regulation has now been agreed by the Single Sky Committee but remains subject to Parliamentary and other scrutiny. The CAA has carefully considered the extent to which the putative SES II arrangements are consistent with the May 2010 proposals or where modifications may be necessary to update the CAA's proposals for CP3. With that in mind, the CAA considers that the revised Charging Regulation is consistent with the CAA's May 2010 proposal in the following areas:

- service quality - the revised Charging Regulation confirms that Member States can establish or approve financial incentive schemes to support improvements in the provision of air navigation services or the reduction of the environmental impact of aviation which would apply through modulation of charges[2]. Therefore, there are no implications which were not anticipated in the CAA's May 2010 document.

- revenue cap – in the May document the CAA proposed to set out the CP3 price control condition for Eurocontrol charges in a format consistent with the revised Charging Regulation. The CAA also published a proposal to create a separate charging condition for London Approach services. This would be a revenue cap based on the revenue assumed from London Approach as a contribution to the joint cost base with NERL's Eurocontrol business. As anticipated in the May proposals, the revised Charging Regulation prescribes a specific calculation based on the determined cost and the risk sharing arrangements[3]. The CAA has therefore framed the proposed Eurocontrol price condition in this document in a format that is aligned with the revised Charging Regulation. The CAA is also proposing a separate price control condition for London Approach charges.

- pension costs - in the May document, the CAA proposed to continue the CP2 approach to regulation of pension costs by passing-through unanticipated variances in costs. The pass-through arrangements would only apply to the cost of NERL's Defined Benefit scheme. The revised Charging Regulation permits the true-up of differences between actual and determined costs arising from unforeseen changes due to national pension regulations and pension accounting rules[4]. On that basis, the CAA is satisfied that the proposals on pension costs in its May document are consistent with the SES II arrangements.

- capital expenditure – costs arising from capital expenditure in one period will be taken into account in setting determined costs in the following period.

- costs of VFR - while the revised Charging Regulation now requires a deduction of the costs of Visual Flight Rules (VFR) flights from the determined costs when calculating the charges in each year, this has no practical effect for the UK because the costs of those services are considered to be zero. This approach is based on the provision in the Charging Regulation that the costs may take into account the benefits to flights operating under Instrument Flight Rules[5]. The UK considers

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[2] Article 12 and Annex IV of the revised Charging Regulation.
[3] Annex IV of the revised Charging Regulation.
[4] Annex 11a(2)(c)(i) of the revised Charging Regulation.
[5] Annex IV and Article 7.4 of the revised Charging Regulation.

that these benefits are sufficient to justify the costs being borne by IFR traffic through being included in the cost base for Eurocontrol charges.

- SESAR – in its May document, the CAA did not propose to treat the operating expenses of NERL participation in the SESAR Joint undertaking any differently to other opex. There are no implications from the revised Charging Regulation and, therefore, the CAA proposes to proceed on the basis of the May proposals.

2.7 The CAA considers that the revised Charging Regulation requires an update to the May 2010 proposals in the following areas:

- volume risk sharing;
- measure of traffic;
- the treatment of inflation in the regulatory framework for CP3;
- correction factor;

and requires a degree of clarification in other areas as follows:

- the treatment of bad debt costs; and
- radio spectrum.

2.8 For each of these issues, this chapter sets out:

- the basis for the CAA's May proposals;
- the requirements of the revised Charging Regulation; and
- the implications for the May proposals.

2.9 Additionally, the CAA has set out how it intends to interpret the implications of the revised Charging Regulation for the use of cost pass-through items and other adjustments to the RAB. The CAA has also considered whether the new arrangements are likely to have implications for the level of the cost of capital.

2.10 Separately, the CAA has considered whether and, if so, how the risk of further volcanic eruption should be treated in the price control.

Volume risk sharing

Basis of CAA's May proposals

2.11 The May 2010 proposals noted that the then draft revised Charging Regulation set out a specific regime for traffic risk sharing as follows:

- where, over a given year, the actual number of service units is higher or lower by less than 2 per cent than the forecast established at the beginning of the reference period, the additional revenue or loss in revenue of the air navigation service provider shall not be carried over;
- where, over a given year, the actual number of service units is higher by more than 2 per cent than the forecast established at the beginning of the reference period, a minimum of 70 per cent of the additional

revenue obtained by the air navigation service provider(s) concerned in excess of 2 per cent shall be returned to users the following year;

- where, over a given year, the actual number of service units is lower by more than 2 per cent than the forecast established at the beginning of the reference period, a maximum of 70 per cent of the loss in revenue incurred by the air navigation service provider(s) concerned in excess of 2 per cent shall be borne by the airspace users the following year; and
- for the first reference period, where, over a given year, the actual service units are lower than 90 per cent of the forecast established at the beginning of the reference period, the air navigation service providers' exposure shall be limited to 10 per cent of the loss in revenue below this point. The remainder of the revenue loss shall be borne by the airspace users.

2.12 The CAA observed that if these arrangements were adopted in the revised Charging Regulation, the CAA would need to consider precisely how the new arrangements should be implemented and whether there would be any implications for the cost of capital in the context of the overall SES II package.

Revised Charging Regulation

2.13 The revised Charging Regulation largely confirms the arrangements described above[6]. However, these have been updated in some areas as follows:

- where traffic is within the range 90 per cent to 110 per cent of the traffic forecast established at the beginning of the reference period, the traffic risk is shared as described in the first three bullets of 2.11;
- where the traffic is less than 90 per cent, the full amount of the loss in revenue incurred by the air navigation service provider(s) in excess of 10 per cent of the difference between the actual service units and the forecast shall be borne by the airspace users in principle no later than year n+2. A further change since the May 2010 proposals is that this is not limited to the first reference period; and
- an equivalent term applying to traffic more than 110 per cent of the forecast such that the full amount of the additional revenue obtained by the air navigation service provider(s) concerned in excess of the 10 per cent of the difference between the actual service units and the forecast shall be returned to airspace users no later than in year n+2.

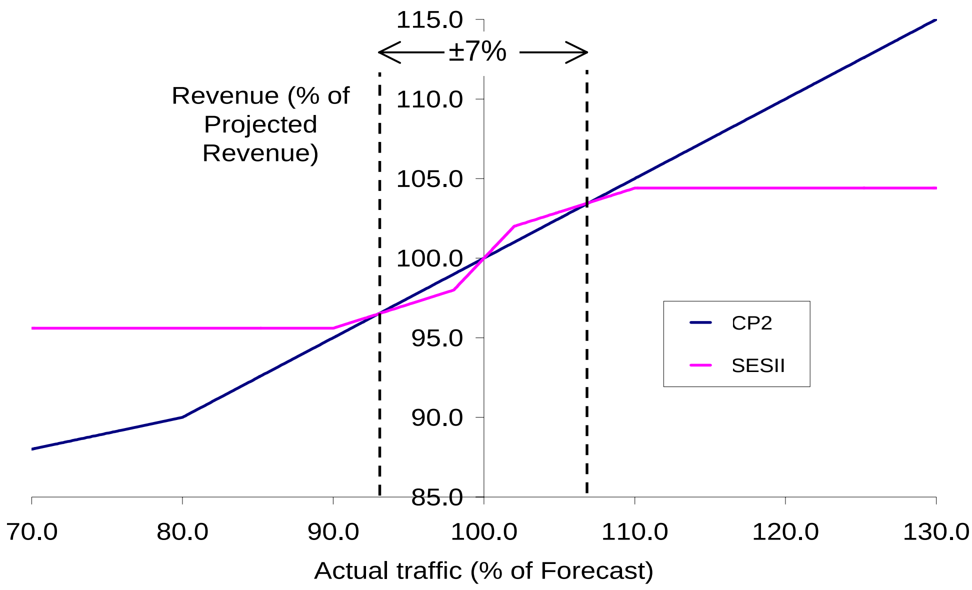
Implications for price control proposals

2.14 Figure 1 below illustrates NERL's expected revenue under the revised Charging Regulation compared to the CP2 arrangements for a single year under each forecast outcome. It shows that for smaller forecast errors (within 7 per cent of the forecast), NERL's exposure to risk is greater (it benefits

[6] The required regime for risk sharing is set out in the revised Charging Regulation Article 11a (1a).

more from under-forecasting[7], but suffers more from over-forecasting[8]) under the SES II scheme than under the existing CP2 scheme. Outside of this range, NERL's risk is lower under the SES II scheme than under the CP2 scheme.

Figure 1: One year revenue outcomes under SES II and CP2 risk sharing schemes



Source: CAA

2.15 The overall effect of the SES II scheme on NERL's exposure to traffic forecast risk in a four year price control is dependent on the net effect of forecast errors from four individual years. When all annual forecast errors are small, NERL is likely to be exposed to a wider range of revenue outcomes under the SES II scheme than under the CP2 scheme. However, where larger forecast errors occur in the control period, especially when such errors are propagated to future years of the price control period[9], then NERL's revenue may not vary as widely under the SES II scheme as under the CP2 scheme from its expected amount.

2.16 The CAA has analysed this in two ways. First, it has compared historical forecasts with actual traffic. This reveals that over CP1 and CP2, NERL would have benefited from the SES II risk sharing scheme, in each case suffering a smaller shortfall from expected revenue than under the CP2 scheme[10]. However, CP1 was influenced by the terrorist attacks of 11 September 2001

[7] Where the actual traffic is greater than forecast (values more than 100% on the x-axis), the revenue under the SES II scheme (as shown on the y-axis) is higher than that under the CP2 scheme.
[8] Where the actual traffic is less than forecast (values less than 100% on the x-axis), the revenue under the SES II scheme (as shown on the y-axis) is lower than that under the CP2 scheme.
[9] For example, an event which causes a traffic downturn in one year, will also lead to over-forecasting in later years unless it is followed by a recovery period of higher than forecast traffic growth.
[10] For this example, no other aspects of the price control scheme other than risk sharing are considered. The revenue calculated here does not take into account, for example, the asymmetric interest within the K factor is intended to mitigate any incentive NERL may have to under-forecast.

in its first year and the subsequent downturn in aviation, whilst the recent recession significantly affected the latter two years of CP2.

2.17 Whilst demand shocks are not uncommon, the impact of 9/11 and severity of the recent recession may be considered so. NERL's five-year traffic planning forecasts over the last six years were generally accurate to within ±3 per cent prior to the onset of the recent recession.

2.18 Second, the CAA has modelled revenues under both schemes over a four year price control period, based on relatively stable traffic in most years, with negative 'shocks' (the effects of which can be either short-term or long-lasting) occurring around once in every seven years. The results suggest that, whilst the SES II scheme gives NERL greater protection against the worst effects of demand shocks, it provides less certainty of revenue in periods when demand is unaffected by such shocks. Details of this modelling exercise can be found in Annex B.

2.19 The CAA has considered the impact of the revenue sharing mechanism alongside NERL's cost structure. A significant proportion of NERL's operating costs are fixed in the short term (sometimes referred to as higher operational gearing) and, therefore, a shock to revenues can have a proportionately greater impact on equity returns.[11] This gearing emphasises both the additional risk NERL will bear from small traffic variations and the additional protection NERL will receive from downside shocks.

2.20 In summary therefore, under the SES II arrangements NERL bears greater risk for the smaller variances in traffic, which are more likely to occur, but receives greater protection against larger shocks than it did through the CP2 arrangements. The new SES II risk sharing arrangement does not therefore point unequivocally in one direction or the other and should not therefore materially alter the overall profile of risk.

Measure of traffic

Basis of CAA's May Proposals

2.21 The CAA noted that for CP2 it had adopted revenue kilometres (with no weight factor) as the driver of revenue in the price cap, as this is a better reflection of the effort required by NERL to process traffic. However, the CAA considered that it would need to change the basis of the specification to service units if this became a requirement of SES II.

2.22 The CAA also observed that the revised Charging Regulation was expected to require the traffic risk mechanism in the price control to be driven by service units and that this would be considered further when the final arrangements were known.

[11] A 1 per cent reduction in revenue leads to a 7-10 per cent reduction in equity returns.

Revised Charging Regulation

2.23 As anticipated, the revised Charging Regulation does require the traffic risk mechanism and the control of charges generally to be driven by service units.[12]

Implications for price control proposals

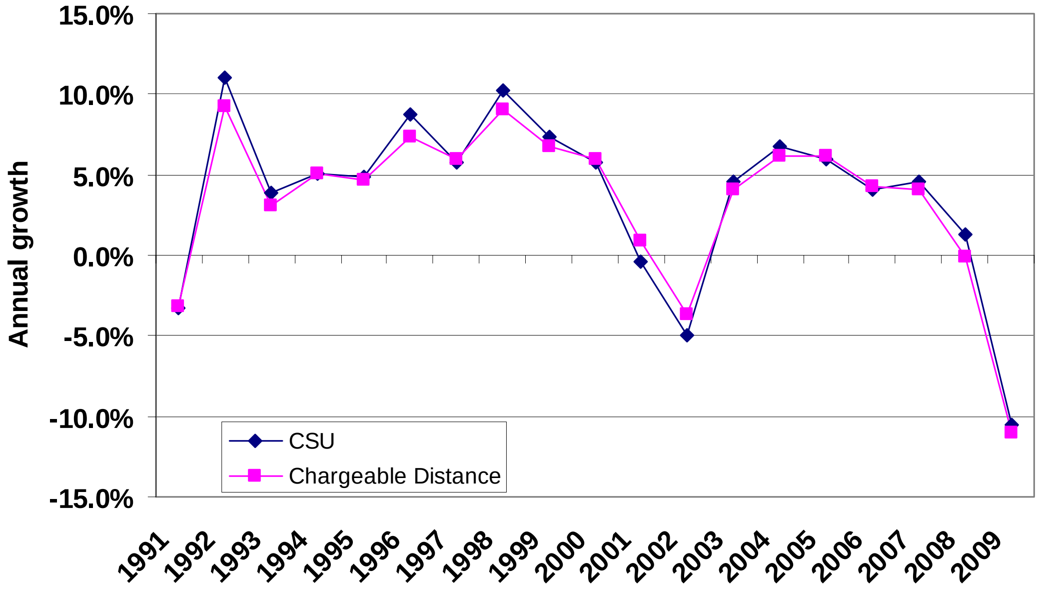
2.24 The draft price control conditions proposed in Annex C of this document are aligned with the revised Charging Regulation and are therefore based on service units.

2.25 The change from distance to CSU charging will alter NERL's level of exposure to different market segments. For example, domestic flights comprised 20 per cent of the chargeable distance in 2009, but only 13 per cent of the CSUs. By contrast, transatlantic over-flights formed 18 per cent of the chargeable distance in 2009, but were 28 per cent of the CSUs. In general, the switch from distance to CSU based charging gives NERL greater exposure to those markets with larger aircraft (typically long haul) and less exposure to those markets with smaller aircraft (typically domestic or short haul).

2.26 To measure how the change from distance to CSU based charging might affect NERL's exposure to traffic risk, the annual growth rates in both total chargeable distance and CSUs between 1990 and 2009 were calculated (see Figure 2).

[12] The revised Charging Regulation requires the calculation of charges to be based on service units rather than Chargeable Service Units. To be consistent with the May proposals the determined costs need to be gross of the revenues from civilian exempt services and divided by the slightly higher service units. The CAA is proposing to exclude service units generated by military exempt services from the number of service units used as a denominator in the calculation of charges. This is necessary as the service to military flights is manned by military personnel. The analysis for the remainder of this chapter is based upon Chargeable Service Units.

Figure 2: Annual growth of chargeable distance and CSUs, 1990 to 2009



Source: CAA analysis of NERL data

2.27 The standard deviation of the two series was taken as a measure of difference from the average annual growth over the period, and therefore an indicator of 'risk'. Although the standard deviation of CSU growth, at 5.3 per cent, was higher than the 5.0 per cent for distance growth, since this comparison is based on relatively few data points, there is no certainty that this difference will be sustained in future years.[13] However, the possible implications for equity returns and the cost of capital – given NERL's operational gearing - are discussed in 2.59.

Treatment of inflation

Basis of CAA's May Proposals

2.28 In its May proposals, the CAA specified price controls in constant 2008/09 prices to be inflated each year by the movement in the Retail Prices Index (RPI). This approach would continue to place inflation risk with customers and is in line with standard UK regulatory practice. The CAA did, however, note that the draft of the revised Charging Regulation extant at that time would have required the "determined costs" to be fixed for each year of a reference period "in nominal terms". As drafted this would have left NERL bearing inflation risk which, all other things being equal, would imply a higher cost of capital and therefore higher charges per CSU in real terms.

Revised Charging Regulation

2.29 The revised Charging Regulation now requires[14]:

[13] The difference was not found to be statistically significant by using a two-sample Kolmogorov-Smirnov test to compare whether the samples come from different distributions, having first centralised them so that they share the same mean, but retain their standard deviation.
[14] Article 6(1a) of the revised Charging Regulation.

- the determined costs to be projected in both real and nominal terms;
- the unit rate to be set in nominal terms subject to:
  - a correction on the basis of actual inflation no later than two years after the relevant year; and
  - the index to be used for considering actual inflation to be the inflation recorded by Eurostat[15] (that is the Consumer Price Index rather than the Retail Price Index).

Implications for price control proposals

2.30 The CAA considers that, in principle, it would be straightforward to state the projected levels of determined costs in both real and nominal terms. It would also be straightforward to make an explicit correction to adjust for the difference in assumed and actual inflation. There are, however, issues arising from the differences between the CPI and RPI as set out below[16].

2.31 The CAA's May 2010 proposals were linked to an analysis of NERL's business plan which had been based on an expectation that the price control would be indexed to RPI during CP3. The CAA notes that the RPI is a common yardstick for pay and other contractual agreements in the UK. It is also the more standard benchmark for financing. There has historically been a systematic difference between the rate of increase of the RPI and the CPI, with the RPI rising faster. In addition, there are significant fluctuations in the behaviour of the two series[17]. This gives rise to two issues:

- how should the CAA deal with the differences between RPI and CPI when meeting the requirement to state the determined costs in "real" and "nominal" terms for CP3?
- are there any implications in terms of risk for NERL where there are variances between CPI and RPI over the course of CP3?

2.32 The CAA considers that rebasing the analysis in the May document from RPI to CPI would require a full re-evaluation of all the inflation assumptions relating to the cost building blocks. In the CAA's view this would be a disproportionate response at this stage. Moreover, NERL's underlying cost base may still be linked to changes in the RPI (rather than CPI) but this would not be reflected in the adjustment of charges for inflation.

2.33 In order to mitigate this risk, the CAA proposes to state the nominal forecasts of determined costs arising from the analysis behind its May and subsequent proposals by uplifting for projected RPI. In terms of stating the determined costs in constant prices, the CAA proposes to rebase these nominal costs to

[15] For the UK, the European Harmonised Index of Consumer Prices (HICP) is calculated by the Office of National Statistics and published in the UK as the Consumer Prices Index (CPI)
[16] For example, RPI includes a number of housing related costs excluded from CPI, but excludes university and stockbroker fees included in CPI. There are also some methodological differences in the calculation of the two indices. For a more detailed description, see Roe and Fenwick, The New Inflation Target: the Statistical Perspective, http://www.statistics.gov.uk/StatBase/Product.asp?vink=10913
[17] From 1989 to 2009, the RPI premium (i.e. RPI minus CPI) has ranged from +2.6 to -2.7. The average premium over this period is +0.7 per cent:, the mean inflation figure measured by RPI stands at 3.4 per cent while for CPI the figure is 2.7 per cent.

constant prices using forecasts of the CPI, consistent with the forecasts of the RPI underpinning the CAA's analysis. This approach should address any anticipated systematic difference between the two series.

2.34 However, under the CAA's proposed SES II approach NERL will bear the risk that the actual difference between RPI and CPI measures of inflation may turn out to be different to that anticipated. The CAA is considering whether, and to what extent, this presents NERL with material additional risk. NERL has obtained several indicative quotes for a bespoke financial instrument that would allow it to hedge this risk. The CAA is assessing this information in order for it to come to a view on whether and, if so, how an allowance for this risk should be included in the price control decision and the value of any such allowance.

2.35 In relation to correcting for actual inflation, the CAA proposes to make the adjustment as near as possible to the charging period to which it relates and the draft licence condition is based on pursuing such an approach. The CAA proposes making the adjustment in year t based on the difference between the value of the CPI index for August in year t-1 compared to the assumption of the average value of the CPI index for the year t-1 applied to the determined costs for the year t-1. In so doing the August value of the CPI index would be used as an estimate for the average value of the index for the year as a whole. Any difference between the August value of the CPI index in year t-1 and the outturn average value for year t-1 as a whole would then be subsequently adjusted when charges are set for year t+1. The first year to which this would apply would be 2012. For example, in respect of the determined costs for 2011, an initial estimate of the effects of the variation in the CPI would be added to (or subtracted from) the calculation of charges for 2012. This estimate would be based upon comparing the value of the CPI index for August 2011 to the forecast value of the CPI index for the year 2011 established in the price control. An adjustment would be made in the subsequent year, 2013, for any over- or under- recovery from the estimate in 2011 based on the actual value of the CPI index for 2011 compared to the forecast value of the CPI index for the year 2011 established in the price control and net of the adjustment made in 2012.

2.36 The CAA also proposes that the corrections for inflation will be adjusted by a risk free rate of interest for both over- or under- recovery as the proposed method of correction is mechanical and involves no discretion on the part of NERL.

2.37 The CAA regards the adjustments it is considering to take account of SES II's move to CPI as transitional for CP3, to recognise the basis on which NERL's business plan was drawn up. For future control periods the CAA anticipates that NERL will need to recognise the CPI basis of SES arrangements and draw up its business plan (and where possible amend its business arrangements) accordingly.

2.38 In the May document, the CAA proposed to continue with its regulatory policy of calculating allowed returns by applying a real cost of capital to the RAB. In calculating a real cost of capital, the CAA deducts RPI inflation from nominal market data because RPI is the measure of UK inflation that is used in financial markets (for example, RPI is the index used for government index-linked gilts). It therefore follows that RPI is the appropriate measure of inflation to be used to uplift the RAB. This is akin to using a 'current cost' RAB as permitted by the revised Charging Regulation Article 6(2). The revised Charging Regulation does not stipulate how the current cost RAB is to be uplifted and therefore the CAA considers it appropriate to continue to apply RPI inflation. To do otherwise would have consequences for calculation of the cost of capital.

Correction Factor

Basis of CAA's May Proposals

2.39 The CAA proposed arrangements to allow correction for traffic volume risk sharing and service quality in a manner similar to the existing price control for NERL. These arrangements would, however, not allow for any correction where NERL decided not to price up to the price control in 2010. This differed from the current correction mechanism for CP2 which allowed for all under- or over- recovery in CP1 to be taken forward into the first year of CP2.

Revised Charging Regulation

2.40 The revised Charging Regulation allows the traffic risk sharing to be corrected, in principle, before year n+2[18].

Implications for price control proposals

2.41 The CAA believes there is merit in making the correction for traffic risk as soon as practicable. It is therefore proposing that there should be a correction in the charges for year n+1 based on NERL's best efforts estimate of the traffic for year n, made towards the end of year n, prior to setting charges for year n+1. Any variance between the adjustment resulting from the actual outturn traffic compared to the estimate for year n (which are likely to be relatively small) would be adjusted for when charges are set for year n+2. The CAA proposes to uplift the correction for traffic risk for interest. In proposing an appropriate rate of interest, the CAA considers that, in general terms, the correction for traffic compared to the forecasts established as part of the price control, is outside NERL's control and therefore should not, in principle, be subject to an asymmetric rate of interest for over- and under-recovery. However, the initial best estimate of the recovery is under NERL's control and the CAA considers that NERL should be incentivised not to over-recover these preliminary sums. It therefore proposes that, consistent with the principle of current arrangements, the second round of adjustment between the NERL estimate of the correction and the actual correction should

[18] Revised Charging Regulation Article 11a.

be subject to an asymmetric rate of interest such that under-recovery is at the risk free rate but over-recovery is at a rate of interest 300 basis points higher.

Bad debts

Basis of CAA's May proposals

2.42 The CAA's May 2010 document noted that as NERL's entitlement to Eurocontrol revenues derives from international treaties rather than commercial contracts, NERL has relatively little control over its debt collection as the processes for enforcing recovery are through Eurocontrol, governments and the CAA.

2.43 The CAA considered that in the absence of any constraint from the revised Charging Regulation, the CAA would have confirmed its proposed approach of adjusting fully at the end of CP3 for any over- or under-provision for bad debts finally written off during CP3 (after interest at the regulatory cost of capital).

2.44 The draft of the revised Charging Regulation at that time did not include bad debts as one of the specific categories of costs qualifying for this treatment. The projections in the May 2010 document made an allowance for bad debts during CP3 of £1 million per year on the basis that a truing up adjustment would be undertaken at the end of CP3. The CAA noted that if this was not permissible, it would have to consider whether this allowance should be revised and whether there were any implications for the cost of capital.

Revised Charging Regulation

2.45 The revised Charging Regulation addresses various uncontrollable costs but does not include any provision to treat bad debts as a pass-through item at the end of CP3.

Implications for price control proposals

2.46 In effect, the revised Charging Regulation requires the CAA to treat bad debt costs in the same way as the majority of other items of opex i.e. the level of costs is capped and NERL takes the risk around any variances against the CAA's projection. The CAA notes that over CP2 bad debts accounted for around 0.25 per cent of total operating costs.

2.47 The CAA has undertaken a review of the historical position on bad debts since the start of the PPP. Table 1 below shows the value of bad debt that NERL has written off on an annual basis from 2002 to 2009.

Table 1: Bad debts written off by NERL

£m outturn	2002	2003	2004	2005	2006	2007	2008	2009
Total bad debt	0.2	0.9	0.6	-	2.4	1.8	-	0.4

Source: NERL analysis provided September 2009

2.48 The CAA notes that these costs tend to be subject to considerable year-by-year fluctuation. However, in broad terms, the CAA considers that £1 million per year is a reasonable estimate of an average amount. On that basis, the CAA confirms that no change will be made to the allowance included in the

May 2010 document. However, consistent with the revised Charging Regulation there will be no truing up of these costs at the end of the control period. While this leads to a somewhat greater exposure to systematic risk for NERL, historical evidence suggests that it is not of sufficient magnitude materially to affect the cost of capital.

Radio Spectrum

Basis of CAA's May Proposals

2.49 The draft revised Charging Regulation at the time of the May 2010 proposals made no provision for any adjustment for charges within the reference period. However, it would have allowed for variances from what was assumed to be accumulated and passed through to charges in the next reference period subject to the costs meeting certain conditions. The CAA stated that it would consider the issue further when the revised Charging Regulation was finalised.

Revised Charging Regulation

2.50 The revised Charging Regulation makes no provision for adjustment of charges during the course of the control period but does allow for the accumulation of variances to be passed through to charges in the next reference period in defined circumstances including "unforeseen and new cost items not covered in the national performance plan but required by obligations set by law"[19].

Implications for price control proposals

2.51 The CAA recognises that there may be scope for unanticipated cost burdens on NERL arising from radio spectrum pricing in the UK, particularly as it might relate to radar. The CAA intends to notify the Commission as part of its national performance plan that this is an additional cost that it considers to be outside NERL's control. It intends, however, to incentivise NERL to manage its use of radio spectrum to mitigate the effect on costs. The CAA therefore proposes that the truing up should only be on a proportion of costs, sufficiently large to mitigate risks but at a sufficient margin less than 100% to incentivise the company to manage its use of spectrum. On this basis, the CAA proposes to true up 80 per cent of any variance in real spectrum costs compared to the costs assumed in the current projections at the end of RP1. This truing up would apply both to a positive or a negative variance in costs.

Cost pass-through and RAB adjustments

Basis of CAA's May proposals

2.52 The CAA's long-standing approach and that which it proposed in the May document is to give effect to a number of regulatory policies by making adjustments to the RAB at the time that it resets the price cap. The May proposals therefore included a number of adjustments to the opening CP3 RAB to reflect items such as the opex rolling incentive mechanism (RIM) and

[19] Revised Charging Regulation Article 11a.

the pass-through of pension costs. The draft Regulatory Policy Statement also confirmed that the CAA would expect to follow this approach at future regulatory reviews, including CP4.

2.53 In addition, as part of its approach to regulating NERL's finances, the CAA proposed a tax claw-back adjustment to the RAB at the start of CP4, and at the start of subsequent control periods, if the level of gearing over the previous control period was, on average, above a pre-determined level.

Revised Charging Regulation

2.54 Under the revised Charging Regulation, items are allowed to be included in determined costs or assets if they are required for the provision of air navigation services and within the provisions of International Accounting Standards (IAS). If they are outside the provisions of IAS, they are to be included in the national performance plan for review by the Commission (Article 6(2)).

Implications for price control proposals

2.55 The CAA considers that its inclusion of items in the RAB is akin to creating a financial asset (or liability) for the company and it is, therefore, within the provisions of IAS to include the financial asset (or liability) in the balance sheet. This implies that the CAA's approach to including specific items (such as the RIM, the tax clawback and the additional finance costs (or savings) on capital expenditure in the RAB is consistent with the SES II arrangements.

2.56 However, the CAA intends transparently to identify all RAB items in the national performance plan to ensure that it complies with the revised Charging Regulation which states that 'any adjustment outside the provisions of International Accounting Standards shall be specified in the national performance plan for review by the Commission and in the additional information to be provided in accordance with Annex II. Annex II requires justification of the possible adjustments to total assets determined by the NSA[20].

2.57 In summary, the CAA considers that the items it intends to include within the RAB should be considered permissible under SES II. A large part are either specifically identified in the revised Charging Regulation or consistent with the provisions of IAS. In respect of any remaining adjustments, the CAA considers that there are strong incentive arguments for their retention. The CAA would make all RAB items explicit in the national performance plan for review by the Commission.

Implications for the cost of capital

2.58 The cost of capital reflects the CAA's estimate of the return that investors expect to receive to reflect the risks they face from investing in NERL's business. In its May document, the CAA proposed a real, pre tax cost of capital of 7.5 per cent.

[20] Article 6(2) and Annex II(2) of the revised Charging Regulation.

2.59 Changes to the design of the price control can potentially change the risk profile of NERL's business in ways that could, in turn, require changes in allowed returns. For that reason, the CAA has considered whether the SES II related changes to the scope and structure of the price control discussed above are likely to have any impact on the cost of capital proposed in May. Each of these are considered in turn:

- *Volume risk sharing* – In 2.20 the CAA noted that it is clear to the CAA that the new risk sharing arrangement does not point unequivocally in one direction or the other and should not therefore, materially alter the overall profile of risk and, therefore, the return it receives.

- *Basis of volume measurement* – as discussed in 2.21 et seq, CSUs will replace distance as the unit of measurement. The CAA's analysis suggests that CSUs may be more volatile than distance as measured by the standard deviation of the difference between annual growth and average annual growth rates. CSU volatility is estimated to be 5.3 per cent and distance volatility to be 5.0 per cent, although, since this comparison is based on relatively few data points, there is no certainty that the difference will be sustained in future years. However, given NERL's operational gearing[21], any such sustained difference could have a material effect on equity returns. On the assumption that the relationship between traffic volatility and the asset beta remains unchanged, and all other things being equal, this would increase the asset beta above the level assumed in the May proposals (0.6[22,23]). Moreover, in the CP2 review[24] the CAA noted that there was a reduction in risk implied by the movement from CSUs (used in CP1) to distance (to be used in CP2) and that this was broadly offset by increasing the revenue risk[25] of NERL's service quality performance. This suggests that, all other things being equal, moving back to CSUs increases NERL's exposure to risk and, therefore, could constitute an argument for a small increase in the cost of capital.

- *Nominal price terms* - As discussed in 2.28 et seq above, the SES II arrangements will require the CAA to adopt a different approach to the treatment of inflation in the future. In particular, determined costs will be specified both in real and nominal terms and inflationary adjustments will be based on the CPI measure rather than RPI. The CAA proposes to deal with this by re-basing the CP3 proposals to

[21] As noted in 2.19 a 1 per cent variance from expected revenues can lead to up to 10 per cent variance in equity returns.
[22] 0.6 was used in the May proposals which implicitly factored in the cost structure as a risk factor, identified in First Economics Paper A Preliminary Estimate of NERL's Asset Beta, 5 March 2009 http://www.caa.co.uk/docs/5/ergdocs/20090305AssetBeta.pdf.
[23] For example, on the assumption that there was a linear relationship between volume volatility and the asset beta, the increased volume volatility would increase the asset beta from 0.6 (used in the May proposals) to 0.636 and increase the cost of capital by around 25bps.
[24] Paragraph 6.10, NATS Price Control Review 2006-2010, November 2004, http://www.caa.co.uk/docs/5/ergdocs/erg_ercp_natsinitialnov04.pdf
[25] CAA increased the amount of revenue that was tied to service quality performance from £10 million to £24 million per annum.

align with CPI. As the SES II arrangements permit correction to account for differences between forecast and actual inflation, the only residual level of risk arises from unanticipated variance between the CPI and RPI indices. The CAA will, as explained in 2.34, continue to examine this issue with a view to concluding on both the scale of the issue, how far it might be mitigated and to the extent that any allowance is appropriate, how that allowance is incorporated into the price cap.

- *Other SES II changes* - NERL's exposure to risk appears to be unaffected by the other changes required by SES II other than the treatment of bad debts. Compared to CP2, the SES II approach to bad debts will increase the risk facing NERL, although as indicated in 2.48 the magnitude of the risk is likely to be insufficient to require an adjustment to allowed returns.

2.60 Most of the changes required by the revised Charging Regulation, including the modifications to traffic risk sharing, do not appear to the CAA to argue for a change to the cost of capital estimate of 7.5 per cent. However, the change in the traffic metric to CSUs could constitute an argument for a small increase in the cost of capital and this will be considered alongside responses to the May 2010 consultation.

Implications for the gearing target and cap

2.61 The CAA has considered whether, in light of the SES II, it is appropriate to change its estimate of the level of gearing (60 per cent) and the buffer (5 per cent) to be used in its proposed approach to regulating finance (and therefore also in its calculation of the cost of capital). While the cost of equity reflects NERL's exposure to systematic risk, the appropriate level of gearing reflects NERL's exposure to both systematic and specific risk. The implications of SES II for the appropriate magnitude of the buffer and the level of the target and cap will be considered in light of responses to the May consultation. However, the CAA has given some initial consideration to the impact of SES II on the arrangements that it has proposed.

2.62 On the one hand, the increased risk that NERL bears where traffic is within 7 per cent of forecast suggests that it may be possible to make the case that the gearing target should be reduced or that the buffer between the target and cap should be increased. On the other hand, SES II traffic risk sharing provides NERL with better protection from sizable downside traffic shocks because it reduces, and ultimately places a floor under, the financial effects of such shocks. The traffic risk sharing provisions under SES II compared to CP2 do not therefore generally point to a significant change in the target level of gearing in either direction. However, as the CAA has placed particular emphasis in its approach to regulating finance on the need for NERL to deliver the level of financial resilience that users require, the greater protection provided against shocks might suggest it was appropriate to increase the target level of gearing from the 60 per cent proposed in May. But the financing structure must take into account not only the risk to which the business is subject but the amount and timing of financing that NERL is likely to require. Given that traffic risk sharing takes place in arrears and the potentially greater extent of possible revenue correction in CP3[26], it does not seem appropriate to increase the gearing target nor reduce the buffer between the gearing target and cap, because to do so could reduce NERL's ability to cope with the funding requirements arising from the delay in receiving income through the correction factors.

2.63 The CAA has also considered whether there are other changes under SES II, in addition to those considered in 2.59 that might affect NERL's specific risk. Regulatory risk, which is specific to NERL and therefore a gearing, not cost of capital issue, may have reduced because the adoption of the revised Charging Regulation has removed recent uncertainty. Alternatively, it could be thought that changes to the regulatory environment – and SES II could involve further changes in future - cause general uncertainty and potentially increase regulatory risk for NERL. However, given the magnitude of the change, it is not obvious that an adjustment to gearing would be the appropriate response to either of these situations.

2.64 Against this background the CAA considers that the proposals it set out in May for regulating finance remain appropriate and are not altered by the revised Charging Regulation, but the issues involved will be considered further in light of responses to the May consultation.

Impact of Volcano

2.65 The eruption of the Icelandic volcano Eyjafjallajökull resulted in a zero flow of air traffic in all UK airspace for 5 days from 15 to 20 April and parts of UK airspace in early May. At the time of writing that volcano has been quiescent for around two months. This incident, together with the possibility of an eruption in the neighbouring volcano, Katla, has caused the CAA to consider whether and, if so how, risk of disruption from volcanic eruptions should be recognised in the CP3 arrangements.

2.66 It appears to the CAA that such volcano risk is not an issue for the cost of capital. The cost of capital is intended to remunerate investors for systematic risk, which, because it reflects trends in economic activity generally, cannot be diversified away. The risk from the volcanic eruption does not appear to fall into this category of risk. The obvious alternative would be to make some allowance in the traffic forecast, or otherwise to provide some element of contingency to NERL. However, the basis on which this might be done is not clear. While historical experience suggests that an eruption of the bigger volcano Katla may well follow that of Eyjafjallajökull, the timing, scale and length of eruption, the height and density of the resulting ash plume and the prevailing winds will all be pertinent to the impact on flights through UK

[26] The current price condition corrects for traffic risk arising from the variance between outturn and a forecast made one year earlier. Under SES II the correction for traffic risk sharing adjusts for the variance between traffic outturn and the forecast made before the start of the control period. There is clearly potential for variances in traffic to be significantly greater against forecasts made much earlier.

airspace. In addition, the aviation safety authorities (including the CAA) have made a number of adjustments to no-fly rules since April to reflect the latest scientific and engineering analysis on the impact of ash on airplane engines and which reduce the impact on flights for any given ash configuration and density. NERL has been closely involved in such mitigation work.

2.67 Give this range of uncertainties there seems no realistic possibility of reliably quantifying the potential impact of volcanic activity of flights over CP3. Moreover, it could be argued that the traffic risk sharing arrangements within the price control are designed to deal with such eventualities anyway by laying off a significant part of the risk to users. Indeed, the arrangements which pertained in CP2 were introduced after 9/11 and those now contemplated under SES II provide greater downside protection to NERL.

2.68 Additionally, SES II contemplates the possibility of activation of an "alert mechanism" by the National Supervisory Authority (in this case the CAA)[27]. This envisages thresholds at a European or National level for key performance indicators, beyond which the NSA may review the situation, liaising with the Commission, and may provide for appropriate measures within three months, which may include a revision of national performance targets. This provides an additional potential safeguard for NERL should traffic risk sharing prove insufficient. This issue is considered further in the draft Regulatory Policy Statement at Annex D. In the case of activation of an alert mechanism, unit rates may be amended during the course of the year. Against this background, the CAA does not think that any special price control arrangements to deal with the financial implications to NERL of volcano risk are warranted.

[27] Article 13(2) of the revised Charging Regulation and Articles 9(3) and 18(2) of the Performance Regulation.

3. NERL Draft Licence Conditions

Introduction

3.1 This chapter describes the draft licence conditions that are set out in Annex C. The purpose in presenting draft conditions at this stage is to give interested parties an opportunity to comment on them before the CAA makes formal proposals to modify the licence conditions under section 11 of the Transport Act 2000 which it plans to do in October 2010 once it has considered the written and oral responses to the current consultation. The conditions are those that the CAA considers would give effect to the proposals contained in the May 2010 proposals document but taking into account the implications of the revised Charging Regulation. The draft conditions in Annex C therefore cover:

i. The regulation of NERL's finance;

ii. The Eurocontrol price control;

iii. The Oceanic price control;

iv. The London Approach price control;

v. Consequential changes to other conditions; and

vi. Other conditions relating to the scope of the price control as discussed in chapter 3 of the May document.

3.2 Should the revised Charging Regulation that is given legal force later in 2010 differ from that agreed by the Single Sky Committee in July, the CAA will consider whether any further changes to the draft licence conditions are necessary to give effect to the legal instrument.

3.3 NERL has also submitted to the CAA proposals for a number of modifications to the conditions in its licence. Some of these flow directly from the CAA's May proposals, and are reflected in the draft modified conditions. However, a large number are unrelated to the CAA's CP3 proposals and deal with matters beyond financing or charge control. The CAA does not intend to deal with these wider proposals as part of the current process of consultation on the regulatory regime for CP3. Rather, the CAA is considering these other proposals from NERL separately. The CAA would expect to publish for consultation in August/September 2010 proposals to modify NERL's licence taking account of NERL's proposals and any proposals the CAA may wish to initiate, in either case consistently with the CAA's duties under section 2 of the Transport Act. The CAA will aim to have all agreed modifications to NERL's licence in place by December 2010 so that a comprehensive revised licence can be published at the beginning of 2011.

Regulating finance

3.4 The CAA's proposals for regulating finance were discussed in detail in Chapter 5 of the May document. The proposals would be implemented through a revision of Condition 5 of the licence (Availability of resources and financial ring-fencing) and, in respect of the tax clawback, through the

Regulatory Policy Statement. These are set out in Annex D and Annex E respectively.

3.5 NERL has proposed, if the gearing cap is introduced, to remove from the licence two existing paragraphs from Condition 5 (14(h) and 23).

3.6 Paragraph 14(h) sets out the existing basic gearing reporting requirements. These are to be superseded by the reporting requirements of the proposed gearing cap licence condition. The CAA's view is that paragraph 14(h) should be deleted if the gearing cap is introduced as envisaged.

3.7 Paragraph 23 sets out the investment grade credit rating requirement. NERL proposed that this is removed for several reasons. First, the CAA's May proposals set out the reasons why an enhanced credit rating requirement is not the most effective mechanism for regulating finance. Second, a minimum investment rating requirement is unlikely to 'bite' because as set out in the CAA's February 2010 document NERL may well be able to achieve an investment grade rating despite gearing being significantly greater than 65 per cent. Third, the existence of two requirements may confuse stakeholders and thus impact the effectiveness of the CAA's proposal.

3.8 The CAA's view is that paragraph 23 should be retained because the two targets are likely to be mutually consistent and, second, the requirement is unlikely to be disproportionate in terms of costs because NERL is likely to require its debt to be rated regardless of the licence condition.

Eurocontrol

3.9 The Eurocontrol Price Control is specified in Condition 21.

3.10 The specification of the Eurocontrol price condition has been revised, compared to the control applying in CP2, in order to align with the revised Charging Regulation in particular:

- Annex IV of the regulation which sets out how the unit rate shall be specified; and
- Article 11a (1) of the regulation which sets out the principles applying to traffic risk sharing.

3.11 Except in respect of the issues above, the calibration of the price control is directly drawn from the projections underlying the proposals made in the May document.

Oceanic

3.12 The Oceanic price control is not affected by the revised Charging Regulation. The Oceanic Price Control is specified in Condition 22 consistent with the policy and analysis published in the May document.

London Approach

3.13 The draft condition at Annex C would set for each of the four years from 1 April 2011 a revenue allowance, termed the Maximum Permitted Total Controlled Revenue. This would be established initially in constant prices to which an inflation[28] factor would be applied to convert the controlled revenue into outturn prices. A correction factor would be applied each year to allow for any differences between the maximum permitted and the actual revenue from the London Approach service.

3.14 In CP2, as noted above, there is a combined price control on Eurocontrol and London Approach charges which is applied in each calendar year consistently with Eurocontrol charging arrangements. However, as charges for London Approach services are, in practice, set by NERL (and promulgated by the CAA) on a financial year basis, the CAA proposes that in CP3 the London Approach price control should be specified on the same basis. This would mean that for the period from 1 January to 31 March 2011 there would be no price control of the London Approach charges imposed through NERL's licence. The current charges that took effect on 1 April 2010 have, however, been specified by the CAA for the purposes of sections 73 to 75 of the Transport Act 2000[29] and the CAA would normally expect these charges to remain in effect until 31 March 2011 for Approach Services at Heathrow, Gatwick and Stansted. The CAA would expect to make a new specification of London Approach charges as from 1 April 2011.

Other licence conditions

3.15 In 3.18 of its May document the CAA proposed to modify Condition 5.12(a) of NERL's licence to allow NERL to conduct business associated with the development and operation of the UK/Ireland FAB and its involvement in and interface with other FABs in future without the need for separate application to the CAA. The draft amendment to condition 5.12 in Annex C is designed to achieve this.

3.16 The CAA is also proposing changes to Conditions 20 (price control definitions) and 24 (information to be provided to the CAA in connection with the Charge Control Conditions) to make these consistent with the price conditions.

3.17 The CAA recognises that Condition 25 (Suspension and Modification of Charge Control Conditions) is also likely to require amendment to bring the processes into line with the SES II regime. As it stands, Condition 25 sets out a process which can be initiated by NERL that can result in the suspension of the price control in "exceptional circumstances" as defined in the licence The nearest equivalent in the revised Charging Regulation is Article 13.2 which allows unit rates to be amended during the course of the year in case of activation of an alert mechanism. Until there is more certainty about how the alert mechanism will work, including the circumstances in which it can be triggered, the CAA is not in a position to propose at this stage modifications to Condition 25 which would be required to align it as necessary with the arrangements for RP1 from 1 January 2012. Until then it would seem

[28] The controlled revenue for London Approach is uplifted by RPI rather than the CPI adjustment required under SES II for determining Eurocontrol charges.
[29] Civil Aviation Authority (Navigation Services Charges) Specification 2010 published in the London Gazette on 26 March 2010.

reasonable for the current Condition 25 to remain in place. The CAA is, however, proposing to add an expiry date of 31 December 2011 to Condition 25 in the expectation that it will be replaced before the end of 2011 and after consultation, by a Condition that is fully consistent with SES II.

Annex A: Revised Charging Regulation July 2010

See separate document

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Annex B: Analysis of CP2 and SES II Traffic Risk Sharing

Introduction

1. Under SES II, the conditions for sharing traffic risk between ANSPs and their customers will be different to those used for CP2. This annex compares the two schemes to assess whether NERL is likely to face significantly different exposure to risk in CP3 under the SES II scheme than under the CP2 scheme. First, it examines the actual outturns for CP1 and CP2 and how NERL's revenues would have compared under each scheme. It also defines a simulation model for forecast accuracy over CP3, which is used to estimate the probability of different revenue outcomes for NERL under each scheme. The variability in these revenue outcomes can help to inform the traffic risk to which NERL is likely to be exposed.

Risk sharing under SES II and CP2

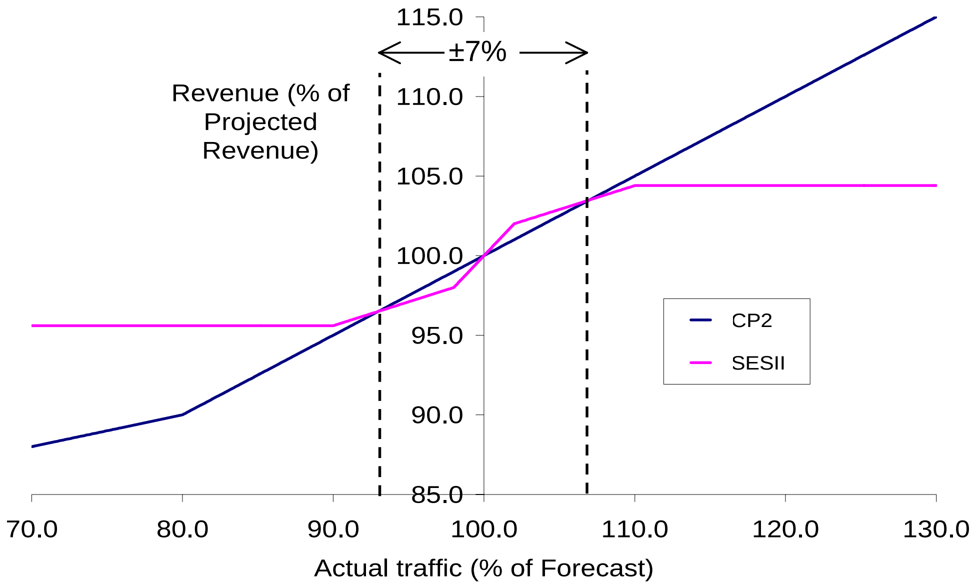
2. In light of the revised Charging Regulation, the section below compares the traffic risk sharing arrangements under SES II with the existing CP2 scheme.

   - CP2 – risk is shared on a 50:50 basis between NERL and its customers, with NERL entitled to keep 50 per cent of extra revenues or recoup 50 per cent of revenue shortfalls due to variance from forecast. In addition, to the extent that traffic is below 80 per cent of the forecast, NERL can recoup up to 80 per cent of the revenue shortfall.
   - SES II – NERL bears all the risk where traffic is within 2 per cent of the forecast, so it can keep all extra revenue, but recoup no revenue shortfall due to forecast errors[30] within these limits. For variance above 2 per cent but within 10 per cent of the traffic forecast, risk is shared 30:70 between NERL and its users: NERL can retain only 30 per cent of extra revenue, but can recoup up to 70 per cent of revenue shortfalls. Where variance from forecast is greater than 10 per cent, NERL bears no risk, so can retain no extra revenue, and recoup all revenue shortfall.

3. Figure 3 illustrates NERL's expected revenue under both schemes for a single year under each forecast outcome. It shows that for smaller forecast errors (within 7 per cent of the forecast), NERL's exposure to risk is greater (it benefits more from under-forecasting[31], but suffers more from over-forecasting[32]) under the SES II scheme than under the existing CP2 scheme. Outside this range, NERL's risk is lower under the SES II scheme than under the CP2 scheme.

[30] Error in this sense is used non-judgementally to describe variance from forecasts.
[31] Where the actual traffic is greater than forecast (values more than 100% on the x-axis), the revenue under the SES II scheme (as shown on the y-axis) is higher than that under the CP2 scheme.
[32] Where the actual traffic is less than forecast (values less than 100% on the x-axis), the revenue under the SES II scheme (as shown on the y-axis) is lower than that under the CP2 scheme.

Figure 3: One year revenue outcomes under SES II and CP2 risk sharing schemes



Source: CAA

4. The overall effect of the SES II scheme on NERL's exposure to traffic forecast risk is therefore dependent on the net effect of forecast errors from four individual years. When all annual forecast errors are small, NERL is likely to be exposed to a wider range of revenue outcomes under the SES II scheme than under the CP2 scheme. However, where larger forecast errors occur in the control period, especially when such errors are propagated to future years of the price control period[33], then NERL's revenue may not vary as widely under the SES II scheme as under the CP2 scheme from its expected amount.

CP1 and CP2 outcomes under SES II and CP2 risk sharing

5. It is relatively simple to examine how the traffic forecasts and outturns[34] over CP1 and CP2 would have affected NERL's revenues[35] under both the CP2 and SES II schemes. Table 2 shows the forecasts for these periods and the actual outturns in CSUs.

[33] For example, an event which causes a traffic downturn in one year, will also lead to over-forecasting in later years unless it is followed by a recovery period of higher than forecast traffic growth.
[34] Some estimation must be made for the outturn in the final year of CP2.
[35] For this example, no other aspects of the price control scheme other than risk sharing are considered. The revenue calculated here does not take into account, for example, the asymmetric interest within the K factor is intended to mitigate any incentive NERL may have to underforecast.

Table 2: Likely effect of CP2 and SES II risk schemes on NERL revenue for CP1 and CP2

	Year	CSU (000) Forecast	Outturn	Outturn vs forecast	Revenue variance from forecast SES II scheme	CP2 scheme
CP1	2001	9,388	8,785	-6%	-3.3%	-3.2%
	2002	9,966	8,349	-16%	-4.4%	-8.1%
	2003	10,535	8,732	-17%	-4.4%	-8.6%
	2004	11,061	9,319	-16%	-4.4%	-7.9%
	2005	11,538	9,871	-14%	-4.4%	-7.2%
Total CP1		*52,488*	*45,055*	*-14%*	*-4.2%*	*-7.1%*
CP2	2006	10,015	10,269	3%	2.2%	1.3%
	2007	10,198	10,739	5%	3.0%	2.7%
	2008	10,504	10,873	4%	2.5%	1.8%
	2009	10,876	9,729	-11%	-4.4%	-5.3%
	2010	11,293	9,869	-13%	-4.4%	-6.3%
Total CP2		*52,886*	*51,479*	*-3%*	*-0.4%*	*-1.3%*

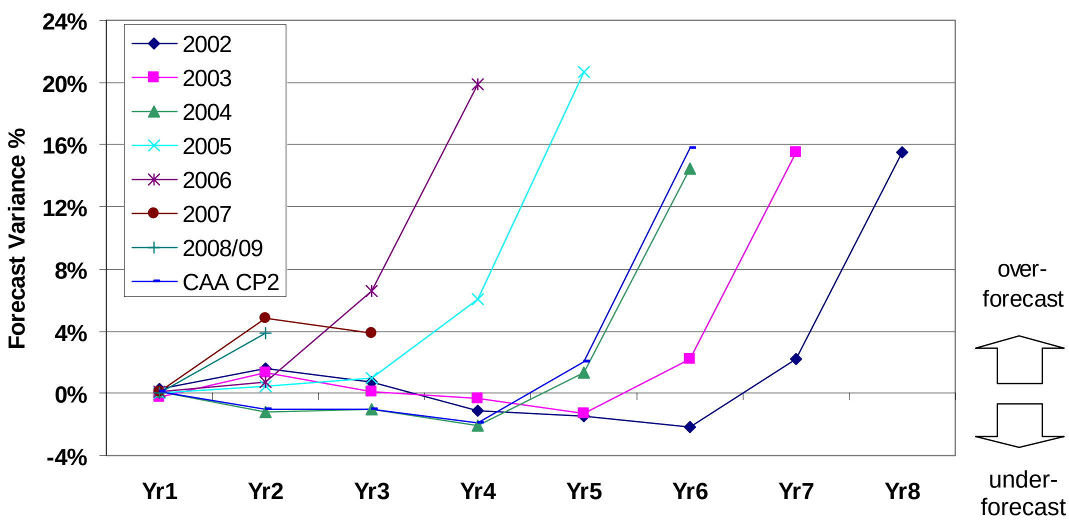
Source: NERL
Notes: Assumes risk sharing successfully affects revenues, even when subsequent years' forecasts are subject to error

6. Table 2 shows that NERL's total revenue for each of the control periods would have been higher under the SES II scheme than under the CP2 scheme, and seem to indicate that forecast error is often outside the ±7 per cent where NERL's risk is lower under the SES II scheme than under the CP2 scheme. However, CP1 forecasts were affected by the events of 11 September 2001 early in the period, which caused a 'step down' in the volume of CSUs[36] affecting forecast accuracy in subsequent years of the price control period, whilst the latter part of CP2 was affected by a global recession.

7. Although these are the only price control forecasts which it is possible to assess, NERL generates annual five-year planning forecasts, and has supplied the CAA with estimates of forecast error for recent years. Figure 4 below shows that, with the exception of the recent recession, NERL's traffic forecasts (in terms of flights) tend to have been accurate to within ±3 per cent.

[36] 11 September 2001 had a similar effect on chargeable flights, but with slightly lower magnitude than for CSUs, since operations of larger, long haul aircraft declined most in the aftermath of the event.

Figure 4: NERL traffic forecast errors 2002 – 2008



2002	0.3%	1.6%	0.7%	-1.1%	-1.5%	-2.2%	2.2%	15.5%
2003	-0.2%	1.3%	0.1%	-0.3%	-1.3%	2.2%	15.5%	
2004	0.1%	-1.2%	-1.0%	-2.1%	1.3%	14.5%		
2005	0.0%	0.5%	1.0%	6.1%	20.7%			
2006	0.1%	0.7%	6.6%	19.9%				
2007	0.1%	4.8%	3.9%					
2008/09	0.0%	3.9%						
CAA CP2	0.1%	-1.0%	-1.0%	-1.9%	2.0%	15.8%		

Source: NERL
Note: forecasts are typically made in September of Yr1, explaining the high level of accuracy for these years

8. Note that the data in Figure 4 relates to chargeable flight forecasts, not to CSUs, explaining the difference in the accuracy of figures for CP2 shown in Figure 4 and Table 2. However, both suggest that NERL forecasts are reasonably accurate in periods of stable traffic growth, but that a shock, where traffic suddenly and unexpectedly falls for reasons such as a terrorist incident or an economic recession, can lead to large over-forecasts.

A simulation of traffic risk under SES II and CP2

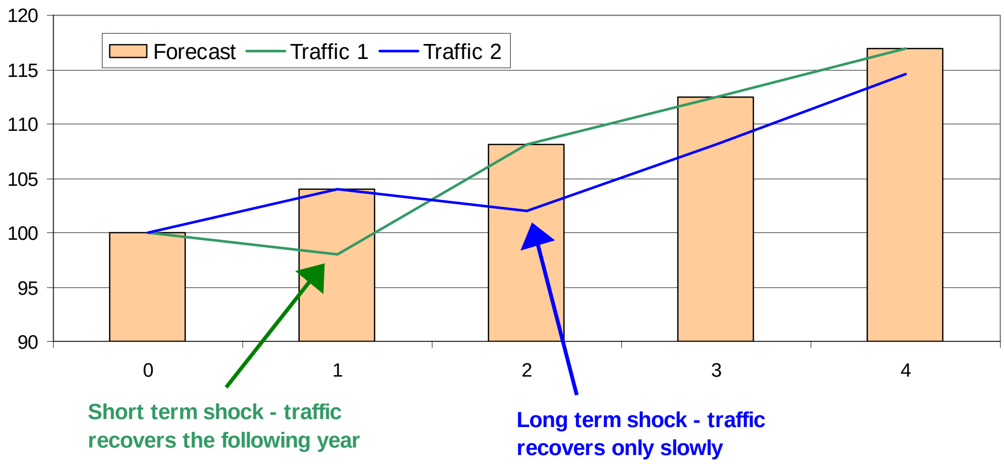
9. In order to further inform the difference in exposure to risk faced by NERL between the two charging schemes, a simulation model was created. The model uses a distribution of forecast errors, based as far as possible on historic observation of NERL forecast accuracy, to simulate revenue outcomes under each charging scheme, across the whole of a four year price control period. The mean and variance of the revenue outcomes under a large set of simulated control periods are compared, with the variance assumed to be relevant to the level of risk NERL experiences under each scheme[37].

[37] The variance is a standard measure of the 'breadth' of the results around the mean. A low variance indicates that revenue at or near the mean value can be confidently expected under most circumstances – it may therefore represent a lower exposure to financial risk. Similarly, a higher variance indicates that revenue may vary more widely from the mean value.

10. The simulation model requires assumptions to be made about the accuracy of forecasts used to set a price control. The key assumptions are:

- Traffic growth is assumed to be reasonably stable and positive in most years (and therefore can be forecast fairly accurately), but around one in every seven years there will be a ‘shock’ which leads to a fall in traffic.
- Shocks can be short term, in which case they affect only the year in which they occur, and traffic in subsequent years returns to the historic trend[38], or can be long term, in which case subsequent years see a return to historic growth rates, but the traffic level remains below the previous trend for a number of years[39]. Figure 5 illustrates these two types of shock.

Figure 5: Examples of shocks used in forecast error simulation



- Traffic forecasts for the price control period assume no shocks will occur in the period and are unbiased (that is, on average they neither under- or over-forecast stable traffic growth).
- Forecast errors for the stable period are assumed to be normally distributed with a mean of 0 and standard deviation of 1.8 per cent in the first forecast year rising to 2.4 per cent in the fourth[40] (therefore 95 per cent of the time, traffic will be between ±3.6 per cent of the forecast in the first year, rising to ±4.8 per cent in the fourth). Forecast errors for shocks are assumed to be normally distributed with a mean of –10 per cent and standard deviation of 4.4 per cent (therefore, for 95 per cent of shocks, the traffic will be between 1.2 per cent and 18.8 per cent below the forecast).

[38] For example, the effects of the recent volcanic ash problem can be seen as short term, since traffic will fall whilst the ash affects air travel, but it is unlikely to influence traffic levels in future years.
[39] For example, the recent recession is likely to be a long term shock, since its effects on the absolute level of GDP and consumer spending power will be felt for a number of years after the economy has returned to growth.
[40] This increase in standard deviation reflects the fact that, even under a growth scenario with no shocks, forecasts are less certain the further forward they are looking.

- Each four year price control period contains either no shocks, a single short term shock or a single long term shock. The assumed likelihood of each of these is shown in Table 3. Note that a particular type of shock is equally likely to occur in each year of the price control period, and that the likelihood of 54 percent that there will be no shocks in the four years is equivalent to a shock occurring, on average, every seven years.

Table 3: Assumed distribution of forecast outcomes

Scenario	Probability
Normal – no shocks in period	54.0%
Long term shock in year 1	7.5%
Long term shock in year 2	7.5%
Long term shock in year 3	7.5%
Long term shock in year 4	7.5%
Short term shock in year 1	4.0%
Short term shock in year 2	4.0%
Short term shock in year 3	4.0%
Short term shock in year 4	4.0%

11. Table 4 shows the results of the simulation under these assumptions. There was little change in the expected revenues under the different schemes[41], but the greater protection from shocks provided by the SES II scheme means that average revenue is slightly higher (at 0.8 per cent below forecast) than under the CP2 scheme (1.0 per cent below forecast).

Table 4: Results of simulation model

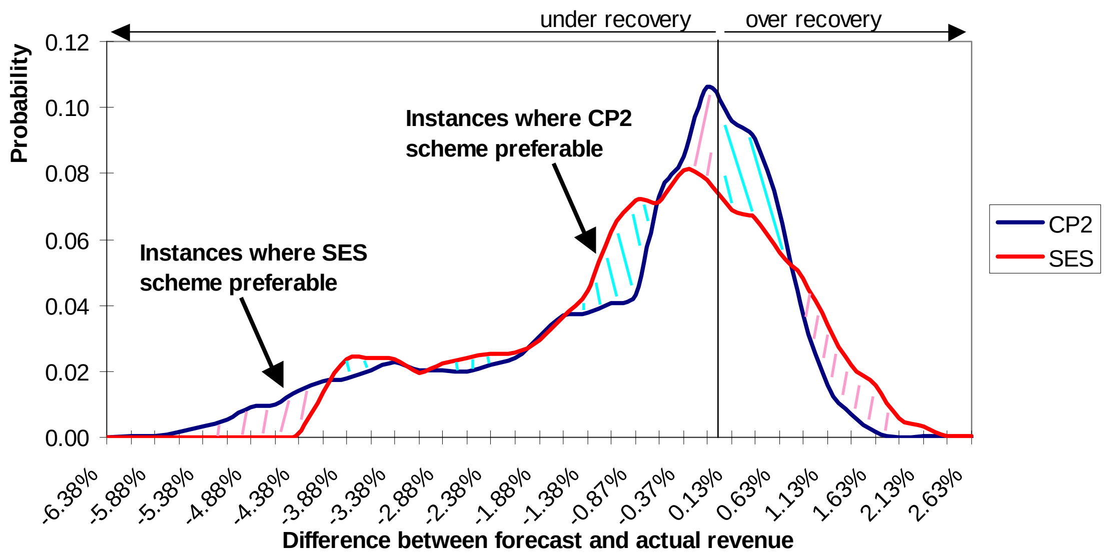
	Expected return			Standard deviation		
Scenario	SES II	CP2	Diff	SES II	CP2	Diff
Normal – no shocks in period	0%	0%	0.0%	0.83%	0.53%	0.30%
Long term shock in year 1	-3.7%	-4.2%	0.5%	0.32%	0.69%	-0.37%
Long term shock in year 2	-2.9%	-3.4%	0.5%	0.45%	0.73%	-0.29%
Long term shock in year 3	-2.0%	-2.4%	0.4%	0.56%	0.68%	-0.12%
Long term shock in year 4	-1.0%	-1.3%	0.3%	0.68%	0.65%	0.03%
Short term shock in year 1	-0.7%	-1.0%	0.3%	0.77%	0.70%	0.07%
Short term shock in year 2	-0.8%	-1.1%	0.3%	0.77%	0.70%	0.07%
Short term shock in year 3	-0.9%	-1.2%	0.3%	0.73%	0.68%	0.05%
Short term shock in year 4	-1.0%	-1.3%	0.3%	0.69%	0.65%	0.04%
Overall	-0.8%	-1.0%	0.2%	0.71%	0.60%	0.12%

12. Conversely, the standard deviation of the revenue outcomes is higher overall under the SES II scheme (at 0.71 per cent) than under the CP2 scheme (0.60 per cent). However, under the SES II scheme, the greater variability in the revenue compared to the CP3 scheme occurs mainly in those scenarios where there is no shock or only a short term shock. This reflects the nature of the SES II scheme where NERL bears all the risk when the forecast error is only ±2 per cent. However, in the long term shock scenarios, particularly those where the shock is in the early years of the price control, there is significantly less variability in the revenue under the SES II scheme than under the CP2 scheme. Figure 6, which shows the revenue probability

[41] Since it is assumed that shocks are not accounted for in the forecast, there is a tendency for revenue to be slightly lower than predicted under either scheme.

distribution for the two schemes arising from the simulation model, indicates that the CP2 scheme is likely to produce more outcomes than the SES II scheme where revenue is close to the expected value (shown by the higher, narrower peak), but also more outcomes where revenue is significantly below expectations (shown by the longer tail to the left)[42].

Figure 6: Distribution of simulated revenues for SES II and CP2 schemes



13. Therefore, the simulation suggests that the overall variation in revenues to which NERL is exposed, as measured by the standard deviation of revenue over the whole period, is higher under the SES II scheme than the CP2 scheme. However, the SES II scheme gives NERL greater protection from severe or extended 'shocks' than the CP2 scheme, which is reflected in the slightly higher average revenue under SES II, and the lower standard deviation for long term shock scenarios.

14. The results of the simulation will be dependent on the assumptions used to establish the likelihood of forecast error in the price control period (the forecast error for normal years, the likelihood of a shock and the distribution of forecast errors in shock years).

[42] The figure also shows that exposure to risk may have positive outcomes for NERL. Where traffic is under-forecast, the more risk NERL is exposed to, the greater its over-recovery is likely to be, as illustrated by the shaded pink region to the right of the figure.

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Annex C: Draft Licence Conditions

See separate document

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Annex D: Draft Statement of Regulatory Policy

1. Annex A of the CAA's May 2010 proposals document set out a draft of the regulatory policy statement (RPS) that the CAA proposed to publish as part of its decision in December 2010. The emerging developments under the SES II arrangements have a number of implications for the draft RPS Additionally, in a number of areas, for example the proposed approach to regulating finance, the CAA has set out further details of how it would expect to implement its proposals. Therefore, this annex sets out the changes that the CAA would expect to make in light of these developments.

2. The CAA considers that the issues outlined in Chapters 2 and 3 of this document only affect the CAA's future regulatory policy and the CAA has not therefore revisited Part 1 of the RPS which evaluated the past. The remainder of this annex, therefore, sets out the updates that the CAA considers are necessary to Part 2 of the draft RPS

Part 2: The CAA's future regulatory policy

3. The review of NERL's CP3 price control is taking place at the same time as the framework for performance regulation of the European Air Navigation Traffic System is being modified. Moreover, in December 2009, the UK Government launched a consultation on whether – and if so how – proposed new objectives for the CAA should be applied to the economic regulation of air traffic services.

4. The SES Performance Scheme Regulation was adopted in May 2010 and the revised Charging Regulation was agreed in July 2010 (subject to Parliamentary and Commission scrutiny). The detailed implications of these changes are described in Chapters 1 and 2 of this document – the resulting impact on the RPS is set out below.

5. The UK Government is considering legislation in relation to the regulation of airports which may include measures that could have implications for the CAA's approach to regulation of air traffic services.

6. Against this background, the CAA will monitor, in the run-up to its formal proposals, in October 2010, how these developments may impact future regulatory policy. In any event, the CAA considers it would be helpful to prepare draft guidance on a number of aspects of its longer term regulatory policy:

   - scope of the price control;
   - structure of the price control;
   - approach to regulating NERL's finances;
   - approach to unanticipated changes in traffic, costs or revenues; and
   - rolling forward the RAB, and implementing the RIM.

Scope of price control

7. The CAA would again expect to take the single till approach as its starting point in the CP4 review (or Reference Period 2, i.e. the period from 1 January 2015 to 31 December 2019), and to adopt it in setting the CP4 Eurocontrol price control providing that it continued to be in civil users' interests.

Structure of price control

8. As noted in the main body of this document, the structure of the CP3 price control has largely been driven by the requirements of the SES II common charging scheme, as currently understood. For CP4 and beyond, the CAA would expect the same common charging scheme to drive the structure of the price control.

Approach to regulating NERL's finances

9. In February 2010, the CAA published its initial thinking on this issue, and consulted on a number of options for tightening up the regulation of NERL's financial arrangements. Having considered the responses to that consultation carefully – and for the reasons set out in Chapter 5 of the May 2010 document – the CAA now proposes to introduce a cap of 65 per cent on the ratio of NERL's net debt to RAB.

10. The CAA sees the proposed cap on gearing as an enduring feature of the economic regulatory regime. Accordingly, while the CAA might be prepared to adjust the level of the gearing cap in future if evidence arose to justify doing so, the CAA would expect a cap on gearing to continue into CP4 and beyond. It follows that the gearing cap might reasonably be expected to constrain NERL's financial structure and, in particular, the future level and profile of distributions. The CAA would expect NERL and its investors to take this into account.

Unanticipated changes in traffic, costs or revenues

11. Unexpected changes in traffic, costs and revenues can arise for a number of reasons. The CAA proposes to deal with unexpected changes in a range of ways.

12. In general terms, the structure of the price control (in terms of the traffic risk sharing arrangements specified under SES II and described in Chapter 2 of this document) serves to limit NERL's exposure to traffic shocks.

13. In addition, for certain categories of cost, namely pension costs associated with NERL's defined benefit pension scheme, radio spectrum costs (where the CAA proposes to true up 80 per cent of any variance in real spectrum costs compared to the costs assumed in the current projections) and NERL's capital expenditure programme. The CAA envisages that divergences between outturn and forecast costs will be dealt with through an end of period 'true up' of NERL's RAB.

14. Of the risks that remain with NERL, the CAA is proposing that:

- systematic risks, i.e. risks that cannot be diversified, are taken into account in estimating the cost of capital, and associated allowed return; and
- non-systematic risks are taken into account in arriving at projections of costs and revenues by including an appropriate allowance for operating cost contingencies.

15. Given these measures, the CAA would not expect divergences between outturn and projected costs that occur within CP3 to justify revisiting the price control, save in genuinely exceptional circumstances. Condition 25 of NERL's licence already acknowledges the possibility that circumstances might arise in which the price control (or, more formally, the 'Charge Control Conditions') would need to be suspended or modified. The licence is worded such that, in 'exceptional circumstances'[43], NERL can effectively require the CAA to consider suspending or modifying the price control, within three months of NERL giving notice.

16. Under SES II, the nearest equivalent to these arrangements is Article 13.2 of the revised Charging Regulation which allows unit rates to be amended during the course of the year in case of activation of an alert mechanism. Until there is more certainty about how the alert mechanism will work, including the circumstances in which it can be triggered, the CAA is not in a position to propose at this stage modifications to Condition 25 which would be required to align it as necessary with the arrangements for RP1 from 1 January 2012. Until then it would seem reasonable for the current Condition 25 to remain in place. The CAA does, however, propose to add an expiry date of 31 December 2011 to Condition 25 in the expectation that it will be replaced before the end of 2011, and after consultation, by a Condition that is fully consistent with SES II.

Rolling forward the Regulatory Asset Base

17. The CAA would expect to roll forward the RAB in accordance with the mechanisms that will be described in an updated version of Appendix 3 of the CAA's December 2005 CP2 price control decision. The updated Appendix will be published for consultation alongside the CAA's October 2010 proposals. In addition, the CAA's proposed approach to regulating NERL's finances includes a mechanism to clawback the tax benefit from increasing gearing above 60 per cent. Annex E of this document sets out a draft of the formula that the CAA would expect to use when implementing this policy.

Applying the Rolling Incentive Mechanism

18. The CAA would also expect to apply the RIM in accordance with an updated version of Appendix 3 of the CAA's December 2005 CP2 price control

[43] Defined in NERL's licence to mean circumstances which are outside NERL's control and which: (a) have had or will have a negative effect on its financial position; and (b) that effect is such that the Licensee's ability to meet its current or future obligations under the Act or the Licence is, or is threatened to be, materially impaired.

decision. The updated Appendix will be published for consultation alongside the CAA's October 2010 proposals.

Capitalised Labour

19. As noted in Chapter 8 of the CAA's May 2010 document, a key driver of part of the outcome of the CP3 settlement, reflected in CP4 prices, is the difference between forecast and outturn levels of capitalised labour. If NERL was to capitalise more labour than it had forecast, and depending on the profile, as well as enjoying the benefit of outperforming the operating cost allowance, NERL could also benefit from:

- an uplift to the opening RAB in the succeeding control period to reflect lower-than-expected operating expenditure (via the RIM); and
- all other factors equal an uplift to the opening RAB in the succeeding control period to reflect higher-than-expected capital expenditure (together with an allowed return).

20. As a result, the current regulatory mechanisms arguably risk giving NERL an incentive:

- to understate the extent to which labour will be capitalised (in preparing its business plan); and
- to capitalise labour (once the regulatory settlement has been fixed, – particularly in the penultimate year of the control period).

21. In these circumstances, the CAA attaches considerable importance to consistency between the accounting approach NERL has taken in drawing up its March 2010 Business Plan, and the accounting approach it takes to capitalising labour during the course of CP3. The CAA would therefore expect, at the level of principle, to see evidence of consistency over time in the accounting approach used.

22. The CAA would also expect to monitor the outturn level of capitalised labour during the course of CP3 and, where outturn levels of capitalised labour diverge from those forecast in NERL's March 2010 Business Plan, expect NERL to explain such divergences.

23. In the absence of evidence of a consistent accounting approach and/or a full and satisfactory explanation of any divergence between forecast and outturn capitalised labour, there should be no presumption that the CAA would use outturn capitalised labour figures in calculating the CP3 RIM, CP3 capital expenditure, and – indirectly – in setting the CP4 opening RAB.

Annex E: Tax clawback

1. This annex outlines the methodology for calculating and adjusting for the tax benefit the licensee receives from adopting a higher level of gearing than assumed in the price control financial modelling. As set out in its May 2010 document, the CAA will implement the ex post adjustment which claws back from the licensee the revenue benefit it obtains from lower tax costs because of high gearing.

2. The clawback calculation takes the following steps:

   Step 1: Compare actual gearing to the target level of gearing of 60 per cent. Gearing is defined and measured as set out in Condition 5 of the licence. If the simple average of actual gearing for the control period is lower or equal to the target gearing, then no clawback applies. If it is higher, then proceed to step 2.

   Step 2: Compare actual interest to modelled interest. If actual interest costs used in the calculation of actual tax are lower or equal to the costs used to estimate the tax charge in the price decision, then no clawback applies. If they are higher, then proceed to step 3.

   Step 3: The excess relief is calculated as actual interest less modelled interest. This is then multiplied by the statutory corporation tax rate used in the price determination, and uplifted by the CP3 cost of capital to reflect the time value of money. The resulting clawback adjustment is to be included in the opening CP4 RAB. The tax clawback is then apportioned to the UKATS and Oceanic RABs in proportion to the estimated opening RAB values at the start of CP4 broadly to reflect the relative size of the two businesses.

3. In calculating the tax uplift for CP4, the reduction in revenue (and the tax thereon) arising from the tax clawback should be excluded from the calculation.

Step 1: The calculation of average gearing

As set out in Condition 5, gearing is measured at 31 March and 30 September each year as:

Gearing G_t	=	Actual gearing, as measured in accordance with Condition 5 at 31 March 2011, 30 September 2011, 31 March 2012, 30 September 2012, 31 March 2013, 30 September 2013 and 31 March 2014 forecast gearing, as estimated in accordance with Condition 5 at 30 September 2014
Average gearing (a simple arithmetic mean of gearing at the eight measurement dates)	=	$\dfrac{\sum_{t=1 to 8} G_t}{8}$
If average gearing	$>$	60 per cent, then proceed to step 2.
	$\leq$	60 per cent, then no tax clawback

Step 2 comparison of actual interest costs to modelled interest costs

A (year ending 31 March 2011-2014)		Actual interest costs used in the calculation of Corporation Tax for the years ending 31 March 2011, 2012, and 2013 and the forecast interest costs used in the estimation of the corporation tax charge for the year ending 31 March 2014 all expressed in 2008/9 prices
M (year ending 31 March 2011-2014)	=	Modelled interest costs (2008/9 prices) used in the calculation of the tax charge for which the cost of capital was uplifted

Namely

M_{2011}	=	£34,004,042
M_{2012}	=	£34,695,474
M_{2013}	=	£34,505,812
M_{2014}	=	£33,856,374

Additional interest costs (AA)	=	The difference between actual interest costs and modelled interest costs

Namely, for each year

$AA_{\text{(year ending 31 March 2011-2014)}}$	=	$A_{\text{(year ending 31 March 2011-2014)}} - M_{\text{(year ending 31 March 2011-2014)}}$
If $\Sigma AA_{\text{(year ending 31 March 2011-2014)}}$	$>$	0 then proceed to step 3
(The sum of AA for all years)	$\leq$	0 then no tax clawback

<u>Step 3 calculation of the clawback</u>

tax claw back (the amount by which the opening RAB of CP4 will be reduced (2008/9 prices))	=	$[AA_{2011} \times (1+WACC)^{7/2} \times T_{2011}$ $+ AA_{2012} \times (1+WACC)^{5/2} \times T_{2012}$ $+ AA_{2013} \times (1+WACC)^{3/2} \times T_{2013}$ $+ AA_{2014} \times (1+WACC)^{1/2} \times T_{2014}]$
Where WACC	=	the cost of capital used in CP3 (7.5%)
Where T	=	the statutory Corporation Tax rates used in the modelling of CP3 price control