



Review of “NG ESO: risk and remuneration under Ofgem’s RIIO2 Draft Determination”

Prepared for National Grid
Electricity System Operator
Limited

Glossary

CMA	Competition Market Authority
DBC	Dispatch Balancing Constraint
DD	Draft Determination issued on the 9 th July, 2020
DIWE	Demonstrably Wasteful or Inefficient Expenditure
DS3	Delivering a Secure, Sustainable Electricity System project
EBIT	Earnings Before Interest and Taxes
ESORI	Electricity System Operator Reporting and Incentives
NERL	NATS (En Route) Plc
NG ESO	National Grid Electricity System Operator Limited
PCFM	The Price Control Financial Model
PCNP	Pre-construction Network Planning
PR19	Ofwat's Price Control period spanning 2020-2025
RAV	Regulatory Asset Value
RIIO2	Ofgem's second round of RIIO price controls
Smart DCC	Smart Data and Communications Company
SONI	System Operator for Northern Ireland
SSMD	Sector-Specific Methodology Decision
TIM	Totex Incentive Mechanism
TNUoS	Transmission Network Use of System
UKRN	UK Regulators Network
UR	Northern Ireland Authority for Utility Regulation
WACC	Weighted Average Cost of Capital
WCF	Working Capital Facility

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2 Executive summary

NG ESO commissioned KPMG to review and comment on a report by CEPA on behalf of Ofgem titled “*RIIO-2: Electricity System Operator Returns*”. It should be read in conjunction with a KPMG report commissioned previously by NG ESO in November 2019 titled, “*NG ESO: Remuneration requirement & financeability*”.

CEPA’s report examines the risk exposure and required remuneration of NG ESO under the RIIO2 Draft Determination (“DD”). We review and comment on CEPA’s analysis of NG ESO’s risk exposure in light of the DD framework; CEPA’s estimate of the required remuneration for each of NG ESO’s capital layers; and CEPA’s approach to assessing NG ESO’s financeability.

The scope of this document does not include providing commentary in respect of the DD, except insofar as this is necessary to provide a robust assessment of CEPA’s report. However, Ofgem’s selection of a remuneration level at the bottom of CEPA’s range constitutes “aiming down”, and does not appear to be discussed or substantiated in the DD.

Three aspects of CEPA’s analysis of NG ESO’s risk exposure are considered:

- Whether it is symmetric or asymmetric in nature: the scale of NG ESO’s potential cost disallowance under the DD amounts to £30m per annum, which markedly exceeds the capped reward for outperformance of £15m per annum. This gives rise to a *prima facie* presumption of asymmetric risk exposure. This is exacerbated if the distribution of outcomes under ESORI is considered. In practice, NG ESO is unlikely to either earn rewards that are close to the cap of £15m or incur penalties that are close to the cap of £6m. If “extreme” outcomes are excluded, the potential outcomes under ESORI appear more symmetric. By contrast, the disallowances under DIWE continue to be purely (downwards) asymmetric, even once “extreme” outcomes are excluded. This asymmetry cannot be dismissed as immaterial given its scale relative to NG ESO’s financial headroom. Moreover, the exercise of regulatory judgement does not reduce the degree of asymmetry and could exacerbate it. The presence of a “value for money” incentive also does not neutralise or mitigate the impact of potential cost disallowances;
- The extent to which it is systematic in nature: NG ESO exhibits considerably greater systematic risk exposure than energy networks given its asset light nature and high operational gearing. The systematic risk exposure of its RAV-related activities is likely to be akin to that of other system operators: particularly SONI Ltd. In addition to this, NG ESO is exposed to significant risk associated with its non-RAV activities. In large part, this is driven by the extensive scope for regulatory discretion in respect of these activities; and
- The extent of risk exposure associated with the revenue collection function: our assessment of the risk exposure associated with the revenue collection function is largely consistent with CEPA’s. However, we note that the distinction between the short-term challenge of managing liquidity and its “fundamental” exposure to risk could be misleading. It is also premature to dismiss the “basis risk” faced by NG ESO as being “very limited”.

These considerations have a number implications for NG ESO's remuneration requirement. These are summarised in Table 1 below:

Table 1: Summary of required remuneration (£m per annum)

	CEPA	KPMG
Unadjusted RAV return	13.3	13.3
Risk-adjusted RAV return	6.4	6.4
Remuneration for asymmetry	0.0	6.9
Correction to NG ESO RAV-related asset beta	0.0	3.5
Uplift to asset beta for non-RAV systematic risk	0.0	3.7
Revenue collection function	2.6	6.7
Contingent capital	0.0	1.3
Total required return	15.9	35.5
Total risk-adjusted return	9.0	28.6

As indicated above, NG ESO is subject to asymmetric risk, which means that its risk-adjusted returns lie below its unadjusted or face-value returns. Remuneration is therefore needed to compensate for asymmetric risk (£6.9m per annum). CEPA does not estimate any such allowance.

NG ESO's systematic risk exposure in respect of its RAV-related activities is analogous to that of NERL and SONI Ltd, and hence required a similar asset beta (0.59-0.60). This contrasts with the asset beta of 0.45 drawn from the lower end of CEPA's range. Correcting for this error increases NG ESO's required return by £3.5m.

In addition to this, NG ESO requires compensation for its ESORI-related systematic risk exposure. Based on the analytical framework put forward in the KPMG November 2019 report, we estimate that an additional uplift to the asset beta of 0.14 is needed, resulting in a total asset beta for NG ESO of 0.73-0.74. Alternatively, remuneration could be provided via a 0.59-0.60 RAV asset beta together with an absolute allowance for non-RAV systematic risk exposure of £3.7m per annum.

CEPA is correct that bottom-up estimation of the capital requirement is one way to estimate the required remuneration for the revenue collection function. However, its approach suffers from a number of drawbacks. The size of the capital base must be sufficient to cover outstanding cash shortfalls plus a buffer against potential additional exposures for at least two years. NG ESO is also likely to require a degree of protection against cash shortfalls in particular scenarios, under its revenue protection role. The pricing of the capital base is particularly challenging to estimate robustly. CEPA's estimate of the cost of the WCF are unlikely to reflect the cost of a stand-alone entity and may not reflect future costs. CEPA's estimate of the cost of equity is subjective and unsupported by any evidence. In light of these challenges, top-down benchmarks represent the most appropriate basis for estimating the

remuneration requirement. This suggests an *ex ante* allowance of £6.7m per annum, compared with £2.6m proposed by CEPA.

Finally, it is necessary to take into account remuneration needed to fund contingent capital that NG ESO may need to draw upon to cover plausible losses. The methodology adopted by CMA for SONI implies a remuneration required in respect of NG ESO's contingent capital of £1.3m per annum.

With respect to financeability, we outline the following three criteria that must be met for an entity to be considered financeable. In each case, we consider whether CEPA's financeability assessment can determine whether or not NG ESO meets these criteria.

The first criterion is that the regulator has an established framework for remuneration that duly recognises and fairly prices all components of risk and layers of capital. CEPA's assessment does not provide a meaningful test of this criterion because it does not test the financeability of NG ESO from an equity perspective.

The second criterion is that investors should be able to reasonably expect to earn the remuneration requirement. CEPA's assessment does not consider whether NG ESO can reasonably expect to earn the cashflows that are assumed in its base case. Rather, this is assumed as a matter of principle, based on its *prima facie* view of NG ESO's asymmetric risk exposure. CEPA is sufficiently confident in this assumption that it does not even present any credit metric projections upside or downside scenarios, let alone justify whether these scenarios are relevant and realistic. This falls far short of how a debt investor would approach the credit assessment of a prospective borrower, and hence CEPA's assessment cannot be considered to represent a robust credit assessment of NG ESO.

The third criterion is that regulatory provision is made for financial headroom to manage potential downside scenarios. CEPA does not present any scenarios other than its base case forecasts. This means that CEPA lacks any means of examining potential equity requirements under a downside scenario, let alone considering how these might be met and whether this is consistent with the proposed price control arrangements.

Overall, CEPA's financeability assessment does not allow for a meaningful test of any of the three criteria outlined in this section, and hence cannot be considered to represent a robust assessment. Further, when key equity financeability metrics are compared with relevant benchmarks, it becomes clear that NG ESO's remuneration falls short of the required level. As a consequence, the level of remuneration implied by CEPA's report cannot be considered financeable.

3 Analysis of NG ESO's risk exposure

This chapter critically examines CEPA's analysis of NG ESO's risk exposure. In particular, it considers:

- Whether NG ESO's risk exposure can be characterised as symmetric;
- How NG ESO's total and systematic risk exposure respectively can be appropriately compared to other businesses; and
- The extent of NG ESO's risk exposure under its revenue collection function.

For each issue, this chapter reprises CEPA's statements and views, sets out areas of agreement and challenge and presents relevant evidence.

The implications of this analysis for the scale of required remuneration are examined in the next chapter.

3.1 NG ESO's exposure to asymmetric risk

CEPA correctly acknowledges that the existence of asymmetric risk exposure warrants compensation in order to bring expected returns in line with allowed returns:

*"Where a regulated company is explicitly exposed to cost disallowance asymmetry as part of a sculpted incentive regime it may be appropriate to provide an additional ex ante allowance to ensure that a notionally efficient entity would expect to earn its cost of capital."*¹

However, CEPA disputes that this cost asymmetry applies to NG EGO. A consistent thread running through CEPA's analysis is the presumption that NG ESO faces risks that are largely symmetric and balanced under the DD. This is exemplified by the following statement in the Executive Summary of its report:

*"Ofgem has proposed to treat costs under an incentive regime with upside and downside, in principle eliminating the asymmetric downside risk related to cost performance."*²

This statement implies that any incentive regime under which a company can receive both rewards and penalties will – as a matter of principle – lead to symmetric risk exposure.

Later in its report, CEPA puts forward a different position, which acknowledges the existence of downside risk relating to cost performance, but dismisses it as immaterial on the basis that networks also face this downside risk but do not receive compensation for it:

*"The cost regime faced by the ESO is no longer explicitly asymmetric except in ways that mirror the cost treatment for regulated networks (which do not attract any provision)"*³.

¹ CEPA, "RIIO-2: Electricity System Operator Returns", p5.

² CEPA, "RIIO-2: Electricity System Operator Returns", p6.

³ CEPA, "RIIO-2: Electricity System Operator Returns", p55.

This statement implies that any uncompensated asymmetric risk faced by networks must also be immaterial for NG ESO.

In addition, CEPA echoes the position advanced in the DD that the exercise of regulatory judgement by Ofgem serves to further mitigate or eliminate exposure to risk – and by corollary, to asymmetric risk:

“Ofgem’s approach to cost incentives for the ESO, with no direct application of a sharing factor and allowing for the consideration of external factors, mitigates [the additional cost risk arising from ESO’s higher totex-to-RAV ratio vs other networks]”.

This statement suggests that, under its approach to cost incentives, Ofgem will take into consideration any external factors driving cost underperformance and will only disallow expenditure that is manifestly driven by management inefficiency alone. This in turn implies that either: i) any costs disallowed would either be trivial, such that the asymmetric risk can be considered “mitigated”; or ii) costs that are demonstrably inefficient should not be considered when assessing asymmetric risk exposure, and hence do not warrant compensation as a matter of principle.

Three aspects of CEPA’s position are considered below:

- Whether, under Ofgem’s proposals, the scale of potential rewards for outperformance can be reasonably considered to balance the combination of the potential penalties for underperformance and cost disallowances;
- Whether the scale of the potential asymmetric risk exposure – if any – for NG ESO can be considered material;
- Whether it is reasonable to assume that the exercise of regulatory judgement will substantially mitigate the degree of asymmetry; and
- Whether the ESORI regime can be considered to neutralise or mitigate the impact of the DIWE mechanism in practice.

3.1.1 The balance of rewards and penalties under the DD

NG ESO’s balance of rewards and penalties under the DD is driven by various components of the regulatory framework:

- The ESORI scheme, under which Ofgem has proposed to cap the maximum rewards and penalties to £15m and £6m per annum respectively;
- The risk of financial penalties pertaining to breaches of NG ESO’s obligations; and
- Cost disallowance: Ofgem has indicated will disallow any expenditure it deems to be Demonstrably Inefficient or Wasteful Expenditure (“DIWE”), within the ambit of its published guidance. It has stated that it will limit any such disallowances to 10% of RAV per annum.

When combined, these components of the framework imply a downwards-asymmetric exposure, since there is a significant disparity between the maximum available rewards on offer and the maximum possible penalties/disallowances. In addition to potentially incurring penalties of up to £6m per annum, NG ESO is potentially exposed to c.£30m in cost disallowances and/or other financial penalties per annum. This compares with a maximum of

£15m per annum in rewards under ESORI. The penalties/disallowance potentially amount to more than double the available rewards.

This gives rise to a *prima facie* expectation that NG ESO faces asymmetric downside risk. This *prima facie* asymmetry is exacerbated if the distribution of outcomes under ESORI is considered. In practice, the distribution of outcomes under ESORI is likely to be concentrated relatively closely around zero: that is, NG ESO is unlikely to either earn rewards that are close to the cap of £15m or incur penalties that are close to the cap of £6m. If “extreme” outcomes are excluded, the potential outcomes under ESORI appear more symmetric. By contrast, the disallowances under DIWE continue to be purely (downwards) asymmetric, even once “extreme” outcomes are excluded.

3.1.2 Materiality of asymmetric risk exposure under the DD

CEPA explicitly compares the cost treatment for regulated networks to the cost regime for NG ESO, and suggests that they exhibit asymmetry to a similar degree. This statement does not demonstrate that NG ESO’s cost regime is not asymmetric, since: i) regulated networks’ cost regime exhibits considerable asymmetry; and ii) regardless of the cost treatment for regulated networks, the asymmetry faced by NG ESO under its cost regime is material relative to its financial headroom.

Regulated networks have historically highlighted concerns regarding the degree of asymmetry that they faced under their cost regimes. The RII02 DD and Ofwat’s PR19 Final Determinations both exhibit significant asymmetry in their incentive regimes that is more pronounced than in the past, and this is significant area of contention between Ofgem and the companies. This is also the case in the water sector. Three of the four companies that have appealed the PR19 Final Determination to the CMA have cited uncompensated asymmetric risk exposure as an explicit ground of appeal⁴. This highlights that even large network businesses face financial challenges associated with downside cost exposures that are sufficiently material to warrant appealing the price control determination to the CMA.

Asymmetric risk exposure is even more of a challenge for NG ESO than for regulated networks, since even small absolute downside cost exposures are likely to be material compared with its RAV-based financial headroom. The relevant question in the current context is therefore whether the extent of asymmetric risk faced by NG ESO is material relative to its financial headroom. To address this question, we assess whether there is a shortfall in expected (i.e., probability-adjusted) terms, and how any such shortfall compares with NG ESO’s financial headroom.

NG ESO’s expected shortfall in returns due to asymmetric risk is estimated in section 4.1.1 to be £6.9m. The allowed RAV return for NG ESO is 4.42% in nominal terms. When applied to the average RAV for RII02 of £300m, this translates to an annual allowed RAV return of £13m. This figure substantially overstates the extent of financial headroom, since it includes compensation for efficiently-incurred debt costs of £3m. Deducting this from the opening allowed return suggests a financial headroom of £10m.

The estimated shortfall due to asymmetric risk exposure of £6.9m per annum is a considerable proportion of NG ESO’s available financial headroom of £10m. Ofgem themselves have highlighted that downside exposures of smaller magnitude than this figure

⁴ Anglian Water, RP19 CMA Redetermination, Statement of Case, April 2020, page 248; Bristol Water, PR19 Redetermination, Statement of Case, April 2020, page 144, page 157; NWL, PR19 Redetermination, Statement of Case, April 2020, page 189.

are likely to be problematic for NG ESO: “On the evidence before us, we believe annual downside values greater than £6m could have a disproportionate impact on NG ESO financing given the size of its Regulatory Asset Value (RAV)”⁵. This suggests that the asymmetric risk faced by NG ESO cannot be dismissed as immaterial.

3.1.3 The extent to which the exercise of regulatory judgement mitigates any potential cost asymmetry

The UR has previously put forward the position that the exercise of regulatory judgement under evaluative mechanisms such as DIWE obviates the need to compensate companies for downside risk. This was a major point of contention in the context of the SONI CMA appeal. The UR argued in that context that any amounts disallowed under evaluative mechanisms applicable under SONI’s regulatory framework should not be compensated. Its reasoning was that, in practice, the regulator would exercise its judgment to ensure that disallowances would only be in respect of inefficient expenditure that should be borne by investors. This UR argued that the prospect of disallowances pertaining to future inefficient expenditure did not, as a matter of principle, warrant additional remuneration:

“[The UR stated that it was] a novel proposition to provide SONI with a guaranteed upfront allowance equal to the speculative value of future DIWE costs, against the potential that it might be so clearly and demonstrably inefficient that the UR finds it necessary to intervene to impose a disallowance.”⁶

The CMA was categorical in its response that asymmetric risk exposure – where it is material – must be compensated, regardless of whether this asymmetry pertained to the prospect of disallowances of manifestly inefficient expenditure:

“The application of asymmetric risk to such a large proportion of SONI’s costs without a corresponding return would be inconsistent with the expectations of investors that, on average, returns would be expected to be consistent with the cost of capital”⁷.

This implies that even if Ofgem could be relied upon to limit disallowances to demonstrably inefficient expenditure, the prospect of cost disallowances without any offsetting prospect of rewards for outperformance would undermine the “fair bet” principle.

This is exacerbated by the fact that there is a risk that Ofgem will miscategorise efficient expenditure as inefficient. Even under the most favourable circumstances, determining whether expenditure has been incurred efficiently or inefficiently is a highly complex task and is fraught with uncertainty. In the case of NG ESO, this task is particularly challenging, since it lacks any obvious UK benchmarks. It is therefore unrealistic to claim that Ofgem can be relied upon to execute this task flawlessly and precisely identify which expenditure is “efficient” and which is “inefficient”.

This premise is even more questionable in the context of RIIO2: throughout this process, Ofgem has propounded a philosophy that has promoted asymmetric outcomes for companies: it has cast doubt on the legitimacy of any outperformance earned by companies

⁵ Ofgem (2020), “RIIO-2 Draft Determinations – Electricity System Operator”, paragraph 2.71.

⁶ CMA (2017), “SONI Limited v Northern Ireland Authority for Utility Regulation: Final Determination”, Paragraph 12.91.

⁷ CMA (2017), “SONI Limited v Northern Ireland Authority for Utility Regulation: Final Determination”, Paragraph 12.102.

as being driven by information asymmetry and hence not warranting any reward, whilst preserving financial penalties for underperformance.

A case in point is the business plan incentive mechanism that Ofgem has applied under RII02. This incentive provided a reward or penalty of up to 2% of totex equivalent depending on the quality and cost ambition of business plans submitted by companies. However, in practice, the incentive acted asymmetrically: the reward received was dependent on submissions by other networks and would have been diluted if all companies had provided high quality plans. By contrast, the penalty was not intended to be diluted if several companies were to submit low quality or high cost business plans.

Further, the incentive mechanism has been recently shown to be unpredictable: Ofgem significantly reduced the reward that its own Performance Panel, which it chairs, decided was appropriate.

The exercise of regulatory discretion therefore in no way mitigates asymmetric risk, and may well exacerbate it.

3.1.4 The interaction between DIWE and ESORI

Ofgem has incorporated a value for money objective into the broader evaluative incentive regime, ESORI. This is the incentive regime that, in CEPA's view, has the effect of "*eliminating the asymmetric downside risk*". It does not, however, render the DIWE principle redundant as demonstrated by Ofgem's retention of it and the emphasis it places on it in its DD

Were the incentive seen as a strong incentive for efficiency, one that compares with the relatively high incentive rates for mainstream regulated networks, it might plausibly reduce the need to rely on a DIWE regime to achieve the regulator's policy objective. However, the ESORI regime is very different. The scale of potential downside under the proposed caps for DIWE are at least an order of magnitude higher than the plausible impact of the value for money component of the incentive regime. For the ESO and its investors, there is realistic concern that Ofgem could view that the ESORI arrangement is insufficiently powered by itself and the policy objective requires proactive use of the disallowance regime.

This concern is reinforced in the ESO Disallowance Principles specified in Ofgem's DD when considered relative to the comparator guidance issued by the Utility Regulator (UR) for SONI. The UR's guidance had been issued before the CMA's final determination and was therefore relevant to its decision on remuneration requirement. The following factors are particularly relevant:

- The ESO Disallowance Principles give no indication that the determination of a disallowance will be in any way modified or constrained by the presence of the wider incentive arrangement. The effect is in the other direction – any disallowed expenditure will be excluded from consideration in ESORI. This indicates the scope of the disallowance regime has not been limited.
- The UR's guidance emphasises that "*The use of the word 'Demonstrably' serves to reverse the normal burden of proof*", so that "*expenditure which is potentially subject to DIWE is presumed efficient; unless and until the UR establishes that it is not*". Ofgem's phrasing is different, and provides no indication of a reversal of the normal burden of proof: "*All expenditure is presumed efficient until Ofgem comes to the decision that it is inefficient*".

- Ofgem’s qualified acknowledgement that “*Reasoned and justified cost increases may be efficient*” further emphasises where the burden of proof is, indicating that Ofgem is free to decide that reasoned and justified cost increases may nevertheless be inefficient.
- Ofgem’s reference to approved policies in areas such as staff remuneration, travel and expenses highlights the potential granular and intrusive level of Ofgem’s scrutiny
- CEPA acknowledges that “*the scale of the ESO’s totex is very large relative to its RAV*”, indicating that even just the scale of the disallowance regime is somewhat greater for the ESO relative to energy networks.

For these reasons, it cannot be concluded that Ofgem’s cost disallowance regime has been somehow neutralised.

The fact that cost disallowance is capped provides little comfort: the level of the annual cap at 10% of the RAV is sufficiently high as to place a substantial proportion of capital at risk and undermine financeability.

Key messages

- The scale of potential disallowance under the DD markedly exceeds any possible reward for outperformance. This *prima facie* asymmetry is exacerbated if “extreme” outcomes are excluded.
- Regardless of the treatment of asymmetry for energy networks, the implied asymmetry for NG ESO cannot be dismissed as immaterial.
- In the SONI case, the CMA recognised the same treatment as asymmetric risk which needs a separate and meaningful remuneration up front.
- The exercise of regulatory judgement does not reduce the degree of asymmetry and could exacerbate it.
- The presence of the ESORI regime does not neutralise or mitigate the impact of the DIWE mechanism.

3.2 NG ESO’s systematic risk exposure

In this section, we examine NG ESO’s systematic risk, and in particular, NG ESO’s risk exposure relative to comparator businesses. The remainder of this section is structured as follows:

- It reprises CEPA’s approach to assessing systematic risk generally and how it applies this to NG ESO specifically;
- It considers CEPA’s choice and specification of systematic risk drivers;
- It examines the potential role of regulatory discretion as a source of systematic risk;
- It highlights that non-RAV activities constitute a significant source of systematic risk;
- It considers the appropriateness of NERL as a comparator for NG ESO; and
- It examines the relevance of system operators as comparators for NG ESO.

3.2.1 Reprise of CEPA approach

The relative risk analysis carried out in CEPA's report in respect of NG ESO's returns relies extensively on analysis carried out in a separate paper⁸ included as an annex to the DDs. The analysis carried out in the separate paper is primarily carried out in the context of energy networks.

CEPA's systematic risk assessment for energy networks

CEPA identifies three groups of risk drivers for energy network businesses:

- market risk;
- price control building block risk; and
- firm structure risk.

These groups of risk drivers determine total risk exposure, not solely systematic risk exposure.

CEPA comments on whether each risk driver might be systematic in nature. At the same time, the extent to which each risk driver contributes to systematic risk exposure is unclear, and in CEPA's view, the systematic risk component of each risk driver is mitigated or dampened by the regulatory regime. For example, CEPA identifies the presence of demand risk as an important source of systematic risk exposure for aviation business, but it does not identify any particularly compelling source of systematic risk for networks.

In the absence of any clear differentiation between those risk drivers that contribute to systematic risk and those that do not, CEPA's implicit assumption is that networks' systematic risk scales proportionally to total expenditure. This is confirmed in the following statement in CEPA's Beta Estimation Issues report: "*Overall, we would expect there to be a positive beta relative to scale of total expenditure, especially where cost inflationary impacts are accounted for within the regulatory framework*"⁹.

CEPA's systematic risk assessment for NG ESO

CEPA carries forward the three groups of risk drivers it had identified previously as the basis for its assessment of NG ESO's systematic risk exposure relative to comparator businesses. It also examines three other metrics:

- The share of operational cashflows in total revenues;
- Companies' exposure to incentives; and
- The ratio of totex to RAV;

It appears that these metrics are intended to support the evaluation of the risk categories identified previously, although the linkage is somewhat vague and not fully explained:

- "*The share of operational cashflows is relevant to the 'firm structure' risk category*"¹⁰;

⁸ CEPA (2020), "RIIO-2: Beta estimation issues", July.

⁹ CEPA (2020), "RIIO-2: Beta estimation issues", p27, July.

¹⁰ CEPA (2020), "RIIO-2: Electricity System Operator Returns", p23.

- “The exposure to cost and performance incentives is one aspect of the regulatory building blocks category”¹¹; and
- “[The ratio of totex to RAV] is one component of risk for total expenditure under the regulatory building blocks category”¹².

In determining which comparator businesses to compare with NG ESO, CEPA refers to the following characteristics as being most relevant:

- “Its status as a licensed monopoly in the UK electricity sector;
- The RAV-backed regulatory framework;
- The price control building blocks that determine the revenues it is able to recover; and
- Its asset light nature.”¹³

On the basis of these characteristics, CEPA selects three comparator sets: the regulated networks, NERL/ENAV and SONI:

“The first three of these features point strongly at the relevance of regulated networks, while the final point suggests that other comparators should be considered. We consider that the CMA’s recent provisional findings for the upcoming RP3 price control period for NERL, the regulated provider of air traffic control services, are likely to be of relevance. We have also reviewed the earlier November 2017 CMA precedent determination of SONI’s licence modification appeal.”¹⁴

CEPA largely ignores the evidence associated with SONI, on the basis that: “The SONI precedent is more difficult to interpret as the CMA did not make an independent assessment of the asset beta in the same way as it did for NERL.”¹⁵

3.2.2 CEPA’s choice and specification of systematic risk drivers

The way in which CEPA’s chosen risk drivers are defined and operationalised is crucial to the selection of appropriate comparators and evaluation of NG ESO’s risk relative to these comparators. By contrast, the way in which CEPA evaluates its chosen risk drivers is highly subjective: it makes no attempt at setting out *ex ante* criteria for determining whether a comparator exhibits higher or lower risk exposure against each driver (let alone “slightly” higher or lower). Instead, it relies on its own judgement in each case.

For example, under price control building block risk, CEPA notes that “The ESO faces lower risk in relation to totex”¹⁶, but also that “The ESO faces greater risk to output incentives as a proportion of RAV”¹⁷. No objective discussion or analysis is presented regarding which of these observations dominates the other, and it is therefore not obvious how CEPA reached the conclusion that NG ESO exhibits “slightly higher” exposure to this risk driver relative to energy networks.

¹¹ CEPA (2020), “RIIO-2: Electricity System Operator Returns”, p24.

¹² CEPA (2020), “RIIO-2: Electricity System Operator Returns”, p25.

¹³ CEPA, “RIIO-2: Electricity System Operator Returns”, p22.

¹⁴ CEPA, “RIIO-2: Electricity System Operator Returns”, p22.

¹⁵ CEPA, “RIIO-2: Electricity System Operator Returns”, p32.

¹⁶ CEPA, “RIIO-2: Electricity System Operator Returns”, p28.

¹⁷ CEPA, “RIIO-2: Electricity System Operator Returns”, p28.

There are also apparent inconsistencies between the evidence CEPA presents and its final judgements regarding relative risk exposure. For example, CEPA's analysis clearly shows that NG ESO exhibits higher risk exposure against all three metrics considered in Section 4.1.2 relative to NERL; by contrast, CEPA have determined that NG ESO exhibits "similar" risk exposure for the risk drivers (price control building block risk and firm structure risk) corresponding to these metrics. It appears that CEPA is therefore using these metrics selectively: and if they do not consistently affect the determination of relative risk, they are of questionable overall value.

The consequence of this subjective assessment of risk is that CEPA understates the risk differential between NG ESO and energy networks, and mischaracterises the risk of NERL relative to NG ESO.

3.2.3 The extent to which regulatory discretion drives systematic risk

At the time of setting price control determinations, regulators exercise judgement in their choices of methodologies, selection of evidence and in the determination of price control building block estimates¹⁸. The scope of these judgements and their impacts on investors is considerable. This explains the intense level of interest of affected parties that we invariably see at the time of a price control review. Price control arrangements can also provide scope for regulatory judgement to be exercised in-period. Two important examples are when further evaluation is required in the context of uncertainty mechanisms or in the determination of incentive rewards/penalties.

While CEPA acknowledges the relevance of regulation to risk, its analysis in its Beta Estimation Issues paper¹⁹ suggests the effect on risk is in large part to mitigate or dilute the underlying company's exposure to systematic risk. CEPA evidently views regulation as a passive process largely indifferent to the environment in which judgements are made. CEPA also indicates that any residual regulatory risk is then mitigated by the appeals framework.

In reality, regulators exercise judgement actively in the context of the political, societal, economic and financial market factors present at the time. Regulators, and indeed appeals bodies, need to be sensitive to those factors, not least to maintain the continuing political sustainability of the regime and to protect it from perceived loss of societal legitimacy. Changes in regulatory stance have big impacts on investors and it is perhaps naïve to think that regulators are not affected by their wider environment.

The direction of systematic influences is clear – regulators tend to take tougher stances when consumers are feeling poorer, more sensitive to the level of consumer bills and less tolerant of utility profitability. Under this view, it is no coincidence that the emergence of a radically tougher regulatory stance on issues such as the cost of capital coincided with a sustained period of austerity.

It appears plausible that evaluative regulatory process is a strong source of positive beta. Appendix 2 outlines CEPA's relative risk analysis for regulated networks. Consistent with KPMG's November 2019 report for NG ESO, CEPA failed to identify any strong drivers of systematic risk for regulated networks other than regulatory discretion. KPMG's November 2019 report for NG ESO showed how evaluative regulatory process is plausibly the

¹⁸ Examples include estimates of efficient levels of expenditure, efficient levels of outputs, the efficient cost of capital and appropriate mechanisms/variables for volume drivers, indexation and other in-period mechanisms.

¹⁹ CEPA (2020), "RIIO-2: Beta estimation issues", p15, July.

predominant source of systematic risk for regulated networks. By extension, it is also liable to be the predominant source of systematic risk for NG ESO.

There are various corollaries to this observation. Firstly, CEPA's crucial view stated in 4.1.3 of its report, that "*The qualitative nature of the ESO's cost and incentive regime in our view makes it less likely that its exposure is systematic in nature*"²⁰ would be categorically wrong. Secondly, the shift in the DD away from deterministic rewards and penalties towards a more evaluative regime may have increased, not decreased NG ESO's systematic risk exposure. Finally, given the extent to which the regulatory framework for NG ESO is evaluative in nature compared with the energy networks, the above observation implies that NG ESO's systematic risk exposure is far in excess of these comparators.

3.2.4 The extent to which NG ESO's non-RAV activities drive systematic risk exposure

NG ESO's RAV represents only one source of systematic risk exposure, and may not even comprise the principal source. To illustrate this, it is useful to note that in principle, NG ESO would be able to continue operating if it were using fully depreciated, leased or outsourced IT facilities, potentially with a RAV of zero. At this point, NG ESO's systematic risk exposure would be driven entirely by its non-RAV activities.

At the time of KPMG's November 2019 report, we anticipated that the evaluative incentive scheme to address the strategic ambition, ESORI, would result in rewards/penalties of up to +/- £30m each year. This was quite clearly disproportionate to the company's RAV.

As indicated previously, there is significant systematic risk exposure associated with evaluative regimes such as ESORI, and the compensation for the systematic risk associated with ESORI is not reflected in the RAV return.

This means that NG ESO's non-RAV activities comprise a significant and un-remunerated source of systematic risk that is not acknowledged by CEPA or Ofgem. We address the estimation of a beta in light of these observations in Section 4.2 below.

3.2.5 The relevance of NERL as an appropriate comparator for NG ESO

CEPA identified that NERL has one attribute that is comparable to NG ESO, its asset light nature. Apart from recognising that NERL is exposed to some demand risk in a way that NG ESO is not, CEPA did not acknowledge any other significant differences in the risk characteristics between these two businesses. Accordingly, it saw the asset beta estimated for NERL by CMA as an upper bound for the possible range for NG ESO.

NG ESO and NERL are different businesses operating in different sectors. NERL's customers are airlines using UK-controlled airspace, many of which are international and which do not necessarily even land in the UK. NERL's charges will not significantly impact on those most vulnerable in UK society. NERL's incentive regimes are not comparable to the highly evaluative character of NG ESO's. NERL's objectives relate to the operation of its own traffic management systems while NG ESO's relates to the operation of the electricity system as a whole. In at least some of these respects, the characteristics of NG ESO point to a rather higher exposure to systematic risk.

²⁰ CEPA, "RIIO-2: Electricity System Operator Returns", p28.

These observations suggest that CEPA places too much emphasis on a relative comparison with NERL and the CMA's estimate of NERL's asset beta should not be taken as an upper bound for NG ESO in the way that CEPA has suggested. However, we acknowledge that NERL represents one potential benchmark for NG ESO's RAV-related systematic risk exposure, given its asset light nature.

3.2.6 The relevance of system operators as comparators to NG ESO

The most relevant comparators for NG ESO are companies that perform essentially the same function under comparable regulatory frameworks – in the UK context, the only other system operator is SONI Ltd. CEPA dismisses the use of SONI as a comparator on the grounds that “*The SONI precedent is more difficult to interpret as the CMA did not make an independent assessment of the asset beta in the same way as it did for NERL.*”²¹

This statement ignores the fact that, as part of its final determination for SONI, the CMA carefully considered whether the beta estimated by the Utility Regulator for SONI's RAV was sufficient to cover the risks faced by SONI. Specifically, the CMA considered SONI's beta at some length before concluding in paragraph 7.203 that the asset beta estimate was not wrong and the Utility Regulator's adjustment to 0.6 was consistent with the evidence.

This statement is also inconsistent with CEPA's comparison with network companies, for which the CMA has also not provided an independent assessment of asset beta.

SONI's regulatory regime (at the time of the CMA determination) did exhibit some important differences to NG ESO under the DD proposals. Most importantly, SONI's regulatory framework did not include an evaluative incentive scheme equivalent to ESORI. This suggests that the asset beta estimated for SONI would be an appropriate reference point for the pure RAV-related beta estimate for NG ESO, and that a suitable adjustment should make in respect of the systematic risk attaching to ESORI.

Key messages

- The subjective and inconsistent specification of the risk drivers chosen by CEPA has led it to understate the risk differential between NG ESO and energy networks and mischaracterises the risk of NERL relative to NG ESO.
- CEPA has ignored the central role played by regulatory discretion as a source of systematic risk for NG ESO. CEPA's has also ignored the role of non-RAV activities as a significant source of systematic risk for NG ESO.
- NERL exhibits a number of differences in terms of risk exposure from NG ESO. Some of these – such as demand risk – suggest that NERL exhibits a higher level of systematic risk exposure to NG ESO, whilst others point in the opposite direction. We do not consider that the asset beta for NERL represents a strict upper bound for NG ESO's asset beta. However, we acknowledge that the asset beta for NERL estimated by the CMA represents one possible benchmark for NG ESO's RAV-related systematic risk exposure.
- CEPA is wrong to exclude other system operators – particularly SONI – as comparators for NG ESO. These businesses are the closest comparators to NG ESO.

²¹ CEPA, “RIIO-2: Electricity System Operator Returns”, p26.

3.3 NG ESO's risk exposure under its revenue collection function

This section comments on the assessment of risk exposure under NG ESO's revenue collection function. The approach to quantifying NG ESO's required remuneration for the risk it bears under its revenue collection function is discussed in section 4.2.

CEPA has considered NG ESO's risk exposure arising from its revenue collection function, and concluded that *"While the ESO is not exposed to risk associated with the eventual recovery of those revenues, without sufficient remuneration it may face liquidity challenges that would represent primary credit rating considerations"*²².

CEPA also states that, *"[NG ESO's] fundamental exposure to risk in relation to its revenue collection role (as opposed to the short-term challenge of managing liquidity) is very limited by virtue of the protections of the regulatory framework"*²³.

NG ESO does indeed face significant liquidity challenges due to its revenue collection function that must be remunerated in order for the business to be financeable. At the same time, it is important to recognise that a short-term liquidity risk does in fact constitute a fundamental risk that warrants remuneration, even where the regulatory framework implies eventual recovery of any cash shortfall together with any required financing costs. This is because liquidity risk results in variations in returns: the fact that the shortfalls are eventually recovered ignores the fact that returns can be significantly affected in the intervening period, that the timing of recovery can vary and that the scale of the impact could vary significantly – all of which are relevant to and priced by investors. CEPA's characterisation of this risk as not being "fundamental" simply because it is short-term in nature could therefore be misleading.

It is also premature to dismiss the "basis risk" associated with the revenue collection role as "very limited". CEPA's excel model appears to compare base case costs of the working capital facility with the corresponding interest costs embedded within the current regulatory mechanisms for each type of revenue that is collected/dispensed. It concludes on this basis that NG ESO faces limited basis risk. However, the basis risk arises precisely because the cost of the working capital facility cannot be known with precision and may be higher than the central case. In the absence of any analysis of the distribution of potential funding costs, the extent of basis risk exposure cannot be known.

Key messages

- CEPA's assessment of the risk exposure associated with NG ESO's revenue collection function is largely correct.
- The distinction between the short-term challenge of managing liquidity and its "fundamental" exposure to risk could be misleading.
- It is also premature to dismiss the "basis risk" faced by NG ESO as being "very limited".

²² CEPA, "RIIO-2: Electricity System Operator Returns", p4.

²³ CEPA, "RIIO-2: Electricity System Operator Returns", p4.

4 Analysis of NG ESO's required remuneration

This chapter examines the implications of the analysis of risk undertaken in the previous chapter for the scale of NG ESO's required remuneration.

4.1 Remuneration for asymmetry and contingent capital

CEPA addresses the questions of required remuneration for asymmetry and contingent capital together in Chapter 6 of its ESO returns report.

Section 3.1 demonstrated why NG ESO faces significant asymmetric downside risk in respect of cost and output performance, and that as a consequence NG ESO's expected remuneration falls materially short of required levels.

In addition, consistent with the principles established by the CMA in the SONI review, the scale of downside risks relative to NG ESO's capital base are sufficiently large as to require the explicit or implicit support of another party such as the National Grid Group. This party would need to be prepared or committed, e.g. by guarantee, to step in whenever a large downside event arises so as to maintain the capital of the company within operable limits. This capital would be costly under an arms-length transaction, and this cost must be remunerated.

The correction of the shortfall in returns generated by NG ESO's asymmetric risk exposure would not, on its own, reduce the scale of the downside risks that it faces to a level that NG ESO would no longer require the explicit or implicit financial support of another party. This means that remuneration for contingent capital is required in addition to the remuneration for asymmetric risk.

This section:

- Reprises the basis for CEPA's proposed remuneration for asymmetric risk and contingent capital respectively;
- Critically assesses the basis for this proposed remuneration; and
- Where CEPA's proposed remuneration is demonstrated to be inadequate, estimates the scale of remuneration that would be necessary to compensate for each.

4.1.1 Remuneration for asymmetry

4.1.1.1 CEPA's proposed remuneration for asymmetry

CEPA's proposes there is no specific requirement for remuneration in respect of asymmetric risk.

CEPA accepts the underlying rationale for remuneration for asymmetric risk:

"Where a regulated company is explicitly exposed to cost disallowance asymmetry as part of a sculpted incentive regime it may be appropriate to provide an additional ex

ante allowance to ensure that a notionally efficient entity would expect to earn its cost of capital”

However, it argues that this rationale no longer applies to the ESO as Ofgem has proposed to “*treat costs under an incentive regime with upside and downside, in principle eliminating the asymmetric downside risk relating to cost performance*”²⁴.

4.1.1.2 Corrected estimate of required remuneration for asymmetry

In principle, the remuneration necessary in respect of asymmetric risk is equivalent to the shortfall in expected returns relative to required returns: importantly, this does not include any premium for bearing downside risk, which investors will also require and must be provided separately. As indicated in section 3.1, the expected shortfall is not straightforward to estimate in practice, since a complete probability distribution of all conceivable performance outcomes is not available. However, the appropriate figure is not zero.

A reasonable reference point with which to estimate the required remuneration for asymmetric risk is that determined by the CMA for SONI. In light of the evidence it considered, the CMA determined an allowance of 3% of the relevant expenditure would be appropriate. KPMG’s November 2019 report for NG ESO developed the CMA’s thinking further and differentiated between an allowance of 2% for a disciplined disallowance framework and 4% for a less disciplined framework.

The sum of baseline annual fast pot and slow pot totex for NG ESO is forecast in the DD financial model at about £230m over the five-year period. A 2% allowance for asymmetric risk on this basis would be £4.6m per annum while a 4% allowance would be £9.2m. It is also necessary to recognise that these forecasts excluded costs that Ofgem considered were too uncertain to perform a reliable costs assessment.

The issues highlighted in section 3.1.4 above indicate that Ofgem’s proposed disallowance regime is not fully disciplined. In these circumstances, an allowance of £6.9m per annum would appear reasonable.

4.1.2 Contingent capital

4.1.2.1 CEPA’s proposed remuneration for contingent capital

CEPA considers that contingent capital may be needed in respect of two types of risk exposure: cost disallowance risk and the risk of financial penalties. In each case, CEPA considers that a case can be made that no provision for contingent capital is required:

*“Ofgem’s current policy towards cost disallowance arguably eliminates the need for any provision for additional contingent capital. The low end of our proposed range reflects this. However, we reflect potential perceptions around asymmetric risk in adopting a provision between £3.6m and £9m at the upper end of our range, based on the KPMG’s assessment of perceived cost disallowance risk.”*²⁵

It is not clear how the upper end of the range has been derived from the KPMG figures presented in Table 6.1 of CEPA’s report, which suggests an upper bound of £8m.

²⁴ CEPA, “RIIO-2: Electricity System Operator Returns”, p6.

²⁵ CEPA, “RIIO-2: Electricity System Operator Returns”, p56.

“KPMG’s assessment reflected a range of financial penalties that are at least in principle linked in scale to the ESO’s turnover (including both allowed revenue from its RAV-based business and BSUoS charges). It also included a provision for appeal costs. Given that Ofgem’s enforcement powers require it to take into consideration a company’s financial standing in determining the scale of enforcement penalties, arguably no provision is needed. The low end of our proposed range reflects this. At the high end of our range we take into consideration KPMG’s proposed provision of between £12m and £25m”²⁶

CEPA then combines these estimates to arrive at an upper bound for the contingent capital provision of £25m. It then translates this into an upper bound for the per annum remuneration requirement of £2m by applying its estimate of the cost of equity premium for NG ESO to its upper bound estimate of the required contingent capital base.

For the DD, Ofgem appears to have adopted CEPA’s lower end estimate of £0.

4.1.2.2 Corrected estimate of required remuneration for contingent capital

CEPA appears to have confused the quantification of the contingent capital base resulting from NG ESO’s downside risk exposure and the separate issue of asymmetry. For example, CEPA’s commentary on performance risk on page 56 of its ESO returns report dismisses the need for any contingent capital on the basis that incentives are not structured to be downside asymmetric and only considers the need for contingent capital for cost disallowances on the basis of *“potential perceptions around asymmetric risk.”*²⁷

This is erroneous, not because of the materiality of the directly associated revenue requirement, but mainly because it highlights a lack of understanding around NG ESO’s financial sustainability as a stand-alone business. At present, other stakeholders (such as rating agencies) can take comfort from NG ESO’s position in a much larger group. NG ESO operates under a non-standard price control regime and is exposed to cash flows and complex risks of a very large scale relative to the assets it uses. Potential downsides are large and, as with any business, investors would be aware of the scope for systemic causes of performance issues. The risks that NG ESO manages requires high standards of risk management on behalf of a sector very considerably larger than NG ESO’s asset base.

KPMG’s November 2019 report explained that its estimate of £200m for contingent capital was derived from the level of contingent capital for SONI on which the CMA provided a remuneration allowance, scaled up for NG ESO’s activity levels. The prospective relevant activity levels have not changed since November 2019, although the proposed regime around cost disallowances has. Nevertheless, £200m was an extrapolation from a round-sum guarantee that SONI’s parent negotiated with its regulator. The fact that this was an approximation does not alter the reality that NG ESO would be precariously structured given the risks it faces if it were truly standalone.

The scaling of contingent capital is a practical one, depending on the potential scale of downside over a period of time. It is also affected by the potential difficulty of raising additional capital after a major downside shock and before potential investors can be clear there is no systemic cause of the shock that might recur in future years. While we recognise that Ofgem proposes a cap to the cost disallowances in any one year, the level of the cap at 10% of the RAV remains high and potentially repeatable in following years. In addition, the company also faces potential downside from its incentive arrangements and from the scope

²⁶ CEPA, “RIIO-2: Electricity System Operator Returns”, p56.

²⁷ CEPA, “RIIO-2: Electricity System Operator Returns”, p56.

for fines. Future shock scenarios could also lead to adverse and difficult-to-predict consequences from its revenue collection role.

The need for additional risk capital was acknowledged by CEPA in respect of the revenue collection role: “*equity invested by the ESO to finance its RAV-based business alone may not be sufficient to secure a working capital facility*”. CEPA estimated some £20-30m for this component. This needs to be taken together with a recognition that NG ESO would need further support in order to handle potential downside scenarios in its other roles. A total level of contingent capital of about £75m would provide a base level of reassurance of financial sustainability to stakeholders. This would give stakeholders reason to suppose that the NG ESO would be robust to potential severe systemic issues affecting its performance for a period long enough to allow it to remedy them. Such a period might extend for significantly longer than a single year.

On this basis, and consistent with the approach that the CMA took for SONI, it would be appropriate to provide for a cost of providing contingent capital at a level of £75m at 1.75%²⁸ per annum. This implies an annual remuneration requirement of £1.3m for this aspect. While this suggests a relatively small increment of revenue requirement, it reflects a realistic assessment of the overall level of contingent capital that NG ESO implicitly needs. This helps put the totality of NG ESO’s revenue requirement in context.

Key messages:

- The appropriate remuneration for asymmetric risk is £6.9m per annum.
- The appropriate remuneration for contingent capital is £1.3m per annum.

4.2 Remuneration for systematic risk exposure

In a November 2019 report prepared for NG ESO, KPMG analysed the remuneration requirement relating to systematic risk in two parts:

- Risk associated with the operation of NG ESO’s assets; and
- Risk associated with NG ESO’s wider objectives relating to the operation of the GB system.

The GB system is generally not owned by NG ESO and is not included in NG ESO’s RAV. Hence, the revenue/ penalty received by NG ESO under the incentive scheme pertaining to these wider GB system activities requires separate remuneration.

In the November 2019 report, KPMG anticipated a scale of the incentive scheme that reflected the strategic objectives that Ofgem had articulated for NG ESO and the prevailing scale of annual rewards/penalties under the scheme of +/- £30m. As noted in section 3.2.4, Ofgem has now reduced the scale of rewards/penalties under the ESORI scheme to a level that is more in proportion to the RAV. The KPMG analysis is updated in light of this development below.

²⁸ Consistent with the figure applied by the CMA in the context of the SONI case.

Section 3.2.5 and 3.2.6 above also explain why the asset beta for NERL should not be taken as an upper bound for NG ESO's asset beta. At the same time, we appreciate that there are certain similarities between the two businesses, such that the asset beta for NERL may represent a possible benchmark for NG ESO. These sections also explained why we consider that SONI is the most relevant comparator for the NG ESO.

The analysis below therefore uses the asset betas for NERL and SONI as a basis for the RAV-related asset beta (0.59²⁹-0.60).

However, neither NERL nor SONI was subject to an incentive arrangement analogous to ESORI at the time their beta was estimated by the CMA. In order to estimate an appropriate beta for NG ESO, it is therefore necessary to consider the two categories of risk set out above separately, before combining them into a single beta estimate.

4.2.1 Structural risk differences between SONI and NG ESO

KPMG's November 2019 report for NG ESO noted that SONI's core business, excluding its pre-construction activities, is more asset-light than NG ESO. However, as set out in that report, SONI's pre-construction activities (on which the WACC is earned) make the asset weights broadly comparable.

The main differences between SONI and NG ESO therefore relate to their respective incentive arrangements. The table below describes and categorises the incentive arrangements for both SONI and NG ESO.

Mechanism	SONI (at time of CMA FD)	NG ESO
Incentive mechanisms	<p>Costs: 50% risk sharing of base price control expenditure, excluding pre-construction (PCNP) and large project (D_t) costs</p> <p>Outputs: SONI's share of the all-island DBC (dispatch balancing costs) incentive mechanism – also the potential of a further all-island incentive in relation to the DS3 System Services project</p>	None
Ex post cost disallowance arrangements	Pass-through for PCNP and D _t costs subject to scrutiny of cost overruns and disallowances on DIWE basis in accordance with process specified by the CMA from paragraph 11.11 of its final determination	Pass-through of all NG ESO costs subject to Ofgem's ESO Disallowance Principles specified in paragraph 4.64 of the DD, which involves disallowances where Ofgem decides it is inefficient
Evaluative outcome incentives	None	ESORI

The next table outlines the relevance of the three categories to systematic risk exposure.

²⁹ Based on the CMA estimate for NERL's asset beta of 0.57, adjusted for Ofgem's debt beta estimate of 0.125.

Category of arrangement	Relevance to systematic risk exposure
Incentive mechanisms	— The mechanistic nature of the arrangement means that systematic risk would only be conveyed to the extent that there is systematic risk in the variables used in the arrangement. It could be argued that exposure to mechanistic cost incentives actually reduces systematic risk exposure. This is outlined in Appendix 2 section A2.2.
Ex post cost disallowance arrangements	★ <i>Ex post</i> cost disallowance arrangements necessitate a level of regulatory evaluation and thus judgement. Section 3.2.3 above explains why there would be potentially strong systematic risk influences. Exposure to systematic risk is generally lower to the extent that the scope of disallowance is structurally limited, for example by DIWE principles.
Evaluative outcome incentives	★★★ Evaluative incentives naturally require high levels of regulatory judgement and would accordingly exhibit relatively high levels of systematic risk exposure as explained in section 3.2.3.

Taking these two tables together indicates that the non-ESORI component of systematic risk exposure for NG ESO may be comparable in scale with the totality of SONI's systematic risk exposure.

It should be recognised that the scope of *ex post* disallowance arrangements for NG ESO are broader than they are for SONI both in terms of the proportion of expenditure the arrangements cover (100% for NG ESO) and the flexibility for regulatory judgement built into the respective guidance and principles, as described in section 3.1.

Consistent with the conclusions in KPMG's November 2019 report for NG ESO, an asset beta estimate of 0.59-0.60 for the non-ESORI component of NG ESO's systematic risk exposure would seem appropriate.

4.2.2 Adjustment to the non-ESORI component of beta for ESORI risk

Section 4.2.1 set the evidence basis for an estimate of 0.59-0.60 for the non-ESORI component of NG ESO's asset beta.

This section sets out the adjustments needed to the beta estimate for non-ESORI risk, in order to remunerate the total systematic risk faced by NG ESO. Section 3.2.4 explained how NG ESO's non-RAV activities are likely to comprise a substantial source of its systematic risk exposure.

KPMG's November 2019 report estimated that the annual remuneration requirement for the additional risk associated with non-RAV activities was £11.1m. At the time of publication, it was anticipated that the evaluative incentive scheme, ESORI, would result in rewards/penalties of up to £30m per annum. Ofgem has subsequently reduced the scale of the ESORI incentive scheme in the DD. In light of the reduced scale of the incentive proposed by Ofgem in the DD, the prorated annual remuneration requirement in respect of non-RAV systematic risk exposure would be about £3.7m.

This additional remuneration can be translated into an uplift to the asset beta as follows:

$$\text{Uplift to asset beta} = \frac{\text{£3.8m}}{\text{ERP} * \text{RAV}}$$

Under the DD, NG ESO's opening RAV is forecast to be £303m and the nominal ERP is assumed to be 8%.

On this basis, the additional remuneration requirement of £3.7m in respect of NG ESO's non-RAV systematic risk exposure translates to an uplift of 0.14 to the asset beta.³⁰ The appropriate combined estimate of the beta to apply to NG ESO's RAV is therefore 0.73-0.74.

This figure appears high *prima facie*, in part because the remuneration for systematic risk is exclusively provided through the RAV under NG ESO's regulatory framework. An alternative would be for the incremental systematic risk pertaining to NG ESO's non-RAV activities through an absolute allowance, rather than as an uplift to the RAV asset beta. This would imply an asset beta of 0.59-0.60, together with a separate allowance of £3.7m per annum.

Key messages:

- NG ESO's RAV-related systematic risk exposure can be most closely inferred from the CMA's estimate of the asset beta for NERL and SONI respectively: 0.59-0.60.
- In addition to this, an uplift to the asset beta is needed to reflect the systematic risk exposure pertaining to SONI's non-RAV activities. The scale of these activities implies an annual remuneration for systematic risk of £3.7m. If this is remunerated as an uplift to the RAV asset beta, it would amount to an uplift of 0.14, suggesting a combined asset beta of 0.73-0.74.
- Alternatively, remuneration could be provided via a RAV asset beta of 0.59-0.60 together with an absolute allowance of £3.7m per annum.

4.3 Remuneration for revenue collection function

This section addresses the quantification of the appropriate remuneration for NG ESO's revenue collection function.

4.3.1 Reprise of CEPA's approach

CEPA notes that NG ESO and KPMG have put forward a combination of "*top-down and bottom-up benchmarking, to arrive at an estimate for what it considers an appropriate level of 'additional' or incremental remuneration*"³¹. Whilst CEPA "*acknowledge that in principle the required remuneration for this role could be set with reference to top-down benchmarks*"³², it opts for the use of bottom-up analysis based on risk modelling, on the basis that "*there are*

³⁰ The uplift to the asset beta is solved such that the incremental increase in the asset beta is sufficient to provide an extra remuneration of £3.8m on top of the existing equity return. The existing equity return is calculated based on an assumption of 7% TMR, 8% ERP, -1% RFR, 0.6 asset beta and a RAV of £333mn.

³¹ CEPA, "RIIO-2: Electricity System Operator Returns", p16.

³² CEPA, "RIIO-2: Electricity System Operator Returns", p39.

*considerable difficulties establishing appropriate comparators for the ESO's revenue collection role in order to establish an appropriate margin benchmark*³³.

CEPA's starting point is NG ESO's analysis of the distribution of cash shortfalls under the revenue collection function. It concludes that a facility that NG ESO considers is sufficient to cover 99.9% of cash shortfalls (£550m) may be oversized, and that a facility that NG ESO considers is sufficient to cover 99.0% of cash shortfalls may be appropriate. On this basis, it concludes that the capital base associated with the revenue collection function is between £350m and £550m under the *status quo* arrangements for TNUoS revenue collection.

CEPA then considers the required return on this capital base. CEPA considers that this should be driven by three components:

- The carrying cost of drawn balances: CEPA considers that this is already remunerated via the interest cost embedded within the existing regulatory mechanisms that compensate NG ESO for cash shortfalls;
- The cost of undrawn balances: CEPA considers that "an annual allowance of 0.3% of the facility size would be sufficient", based on the actual commitment fees faced by NG ESO on its existing working capital facility; and
- The cost of contingent equity: CEPA assumes that a small equity buffer would be needed to procure a working capital facility of the appropriate size, and that this would scale proportionately to the size of the facility. CEPA then assumes that NG ESO would need to expect to earn the cost of equity on this wedge.

CEPA also considers whether any additional remuneration is needed to cover "basis risk" – namely, any difference between the interest rate embedded in the regulatory mechanisms compensating NG ESO for different types of cash shortfall and the cost of the working capital facility. Based on its own modelling, it concludes that no further *ex ante* remuneration is required.

4.3.2 Assessment of CEPA's approach

CEPA is correct that one approach to estimating the remuneration requirement for the revenue collection function is to estimate the size of the capital base and to apply an appropriate return to this capital base.

However, the following groups of issues have been identified with CEPA's approach:

- CEPA's reliance on bottom-up estimates;
- CEPA's approach to sizing the capital base for the revenue collection function; and
- CEPA's estimate of the required return on the capital base.

4.3.2.1 Reliance on bottom-up estimates

By rejecting evidence from top-down approaches, CEPA is at risk of relying on an overly narrow evidence base, since top-down benchmarks contain relevant information and should be considered. As with any benchmarking exercise, the comparators put forward are unlikely to be identical in terms of their risk profile and business activities. This is not sufficient

³³ CEPA, "RIIO-2: Electricity System Operator Returns", p49.

justification to disregard this evidence in its entirety. Indeed, it stands in contrast to CEPA's own approach to estimating the beta for NG ESO, which relies explicitly on comparators that differ significantly in risk profile and business activities.

This is important because the bottom-up estimate of remuneration for the revenue collection function is also subject to uncertainty: for example, the appropriate sizing of the facility, the commitment fee for a facility of this size and the required return on the equity wedge are all variables whose appropriate value is uncertain. When confronted with several uncertain approaches, it is generally optimal to draw an estimate from a broad range of potential approaches.

In previous reports submitted by KPMG on behalf of SONI Ltd, we have identified a number of benchmarks that can – at a minimum – provide robust upper and lower bounds for the quantification of the required remuneration for the revenue collection function. These include: invoice factoring companies, custodian fees for securities transactions and debit and credit card fees. We therefore recommend that these are considered in developing a final estimate of remuneration for this activity.

4.3.2.2 Sizing of capital base

The appropriate sizing of the facility is not straightforward. As CEPA correctly indicates, there is no facility size that would cover all conceivable cash shortfalls.

At the same time, the facility size needs to be sufficient to cover existing financial commitments and outstanding cash shortfalls. NG ESO has indicated that cash shortfalls pertaining to revenue that has yet to be collected in RIIO-T1 exceed the upper bound for the capital base set out under CEPA's Scenario 2. Since these balances take two years to be collected, the capital base under CEPA's Scenario 2 will be inadequate for the first two years of RIIO2. The facility size must – at a minimum – be greater than the value of these outstanding balances during this period. They should also include an appropriate buffer to fund further shortfalls.

NG ESO has also indicated that the current working capital facility was procured during RIIO-T1 for a minimum term of three years. In order to avoid retrospection, the capital base should reflect – at a minimum – the size limit of this facility for the duration of its remaining term.

Regardless of the appropriate facility size, an important question arises regarding what would happen in the event of a tail outcome beyond the facility size limit. Were such an event to occur, there would be several issues under CEPA's current approach:

- Firstly, NG ESO would not have access to committed debt funding beyond the facility size limit, and would need to attempt to access debt markets for the excess amount. There is no guarantee this would be successful;
- Secondly, if NG ESO were successful in procuring the required debt funding over and above the facility size limit, it is highly likely that this would incur a considerably higher cost than the commitment fee on NG ESO's existing facility. This is because: i) there would be one-off costs associated with accessing debt markets in this manner; and ii) any drawn funding would likely incur a higher coupon;
- Thirdly, there would be no remuneration of the incremental equity needed to fund shortfalls over and above the facility size limit (noting that the currently proposed

remuneration only funds the equity needed to support the working capital facility, and not sums beyond the facility size limit).

The solution to these issues would not appear to be to provide additional *ex ante* funding for NG ESO – aside from the difficulty in estimating the remuneration needed to cover a potentially unlimited exposure, no quantum of funding through price control mechanisms could guarantee that NG ESO would be able to access debt funding in the absence of a committed facility.

A more measured approach could be an uncertainty mechanism that would, for example, permit NG ESO to delay payment of required funds to counterparties in the event that cash shortfalls in a given year exceed the facility size limit. If this were to be implemented, the facility size would simply determine the likelihood that this mechanism was triggered.

In the absence of either additional *ex ante* funding or an uncertainty mechanism of the kind outlined above, NG ESO will be exposed to a low-probability, high-impact event that it is ill-placed to manage.

4.3.2.3 Pricing of capital base

Section 3.3 explained why it was premature to dismiss the extent of basis risk associated with the WCF. In particular, the current cost of NG ESO's WCF does not necessarily represent an appropriate proxy for the future cost of funding working capital requirements, for two reasons:

- Firstly, the current facility was arranged at a time when NG ESO was part of the broader National Grid Group and benefitted from implicit financial support from the Group. The cost of a WCF for a truly standalone business cannot be known with certainty; and
- Secondly, the future cost of a WCF cannot be known with certainty (once the current WCF expires), and may well be higher than is currently the case.

These observations suggest that the cost of the WCF is both highly uncertain, and also outside of NG ESO's control.

In addition, CEPA's pricing of the equity wedge necessary to support the WCF is based on its own judgement and is unsupported by any evidence. This is unsurprising, since it is a critical drawback of using a bottom-up approach to estimate the remuneration requirement for the revenue collection function. This weakness is acknowledged by CEPA:

*"The rate of return on contingent equity or risk capital is particularly challenging to benchmark"*³⁴.

Despite the absence of cost of equity benchmarks for this specific function, CEPA concludes that, *"the most defensible and conservative approach here is to allow the same return on equity as for the ESO's RAV-based business. This represents the overall opportunity cost of equity from the point of view of the ESO."*³⁵ This is incorrect for several reasons:

³⁴ CEPA, "RIIO-2: Electricity System Operator Returns", p50.

³⁵ CEPA, "RIIO-2: Electricity System Operator Returns", p50.

Firstly, the leverage implied by CEPA's allocation of the capital base between the WCF and equity (91%³⁶) is significantly higher than Ofgem's notional RAV gearing assumption of 55%. This difference alone implies that the RAV cost of equity is irrelevant to the cost of equity for the revenue collection function.

Secondly, CEPA's implied cost of capital for the revenue collection function (3.1%³⁷) is significantly lower than for NG ESO's RAV. This is also based on CEPA's judgement, and not justified or benchmarked in CEPA's report.

Whilst there are clearly differences in circumstances that limit comparability between the revenue collection function for NG ESO and certain benchmarks, these are likely to represent a more "*defensible*" position than simply exercising judgement without any supporting evidence, as CEPA appears to have done.

4.3.3 Corrected estimate of required remuneration for revenue collection function

The November 2019 report by KPMG presented a rigorously benchmarked allowance based on a number of relevant comparators and an approach that has been adopted by the CMA in the context of SONI Ltd. These estimates remain valid and continue to represent the best available basis for determining remuneration for the revenue collection function in light of the weaknesses of CEPA's bottom-up approach set out above.

In the November report, it was estimated that an appropriate *ex ante* allowance for the revenue collection function was 0.35% of relevant revenue collected, based on the approach adopted by the CMA in the context of SONI Ltd. Since this report was published, the exposure to cash shortfalls associated with revenues that NG ESO will be responsible for collecting has diminished. The November 2019 report assumed that NG ESO would be responsible for the collection of approximately £4.4bn in revenues. On the assumption that NG ESO will move to a "pay as paid" arrangement in respect of £2.5bn of TNUoS cashflows, the exposure to cash shortfalls associated with these revenues will diminish accordingly. It has been argued – e.g., by SONI Ltd – that the system operator remains partially exposed to cashflow shortfall even under such arrangements. For the purposes of the current assessment, it is assumed that this is not the case, and the benchmark margin of 0.35% is applied solely to the remaining non-TNUoS revenues of £1.9bn. This suggests an *ex ante* remuneration of £6.7m per annum, compared with £1.9m currently proposed in the DD.

³⁶ Based on £24m of equity and a capital base of £260m, based on the high end of Table B on p6 of CEPA's report (corresponding to the £1.9m remuneration determined by Ofgem).

³⁷ Based on the sum of *ex ante* (£1.9m) and *ex post* (£6.1m) remuneration for the revenue collection function divided by the revenue collection function capital base of £260m, consistent with the high end of Table B on p6 of CEPA's report.

Key messages

- CEPA is correct that bottom-up estimation of the capital requirement is one way to estimate the required remuneration for the revenue collection function. However, its approach suffers from a number of drawbacks.
- The size of the capital base must be sufficient to cover outstanding cash shortfalls plus a buffer against potential additional exposures for at least two years. NG ESO is also likely to require a degree of protection against cash shortfalls in particular scenarios, under its revenue protection role.
- The pricing of the capital base is particularly challenging to estimate robustly. CEPA's estimate of the cost of the WCF are unlikely to reflect the cost of a stand-alone entity and may not reflect future costs. CEPA's estimate of the cost of equity is subjective and unsupported by any evidence.
- In light of these challenges, top-down benchmarks represent the most appropriate basis for estimating the remuneration requirement. This suggests an *ex ante* allowance of £6.7m per annum.

4.4 Implications of additional allowances for the return on capital

This section draws together the various layers of remuneration that have been estimated in this report and examines how these would affect NG ESO's return on capital. This is summarised in Figure 1 and Figure 2 below.

The principal observation from this analysis is that NG ESO's total remuneration requirement is likely to be roughly twice the amount that CEPA and Ofgem have estimated. However, the return on capital is likely to be modest, and substantially less than RAV return, once all relevant sources of capital have been included. This is intuitive given that NG ESO's total required capital base (£714m) is approximately three times the average RAV in RIIO2 (£303m).

The starting point for this assessment is Ofgem's RAV return of £13.3m per annum, derived from the application of Ofgem's nominal RAV return of 4.4%³⁸ to the average RAV of £303m. As indicated in section 3.1 the headline RAV return is substantially in excess of NG ESO's expected (i.e., risk-adjusted) return. This is due to the fact that NG ESO is subject to a significant degree of asymmetric risk. NG ESO's expected RAV return is around 2.1%. In order to compensate for the impact of asymmetry and bring NG ESO's expected returns in line with its RAV return, additional remuneration of £6.9m per annum is needed.

We further noted in sections 3.2 and 4.2 that CEPA had underestimated the extent of NG ESO's systematic risk exposure, and that an uplift was needed to the asset beta. Substituting CEPA's lower bound estimate for the asset beta of 0.45³⁹ with the asset beta of 0.74⁴⁰ estimated previously results in additional remuneration of £7.2m per annum – bringing the total to £20.6m – and an increase in the RAV return to 6.8%.

³⁸ This is based on a CPIH-real RAV return of 2.35% (as stated in Table 27 of the Draft Determinations) and a CPIH assumption of 2% during RIIO2.

³⁹ Reflecting Ofgem's selection of point estimate.

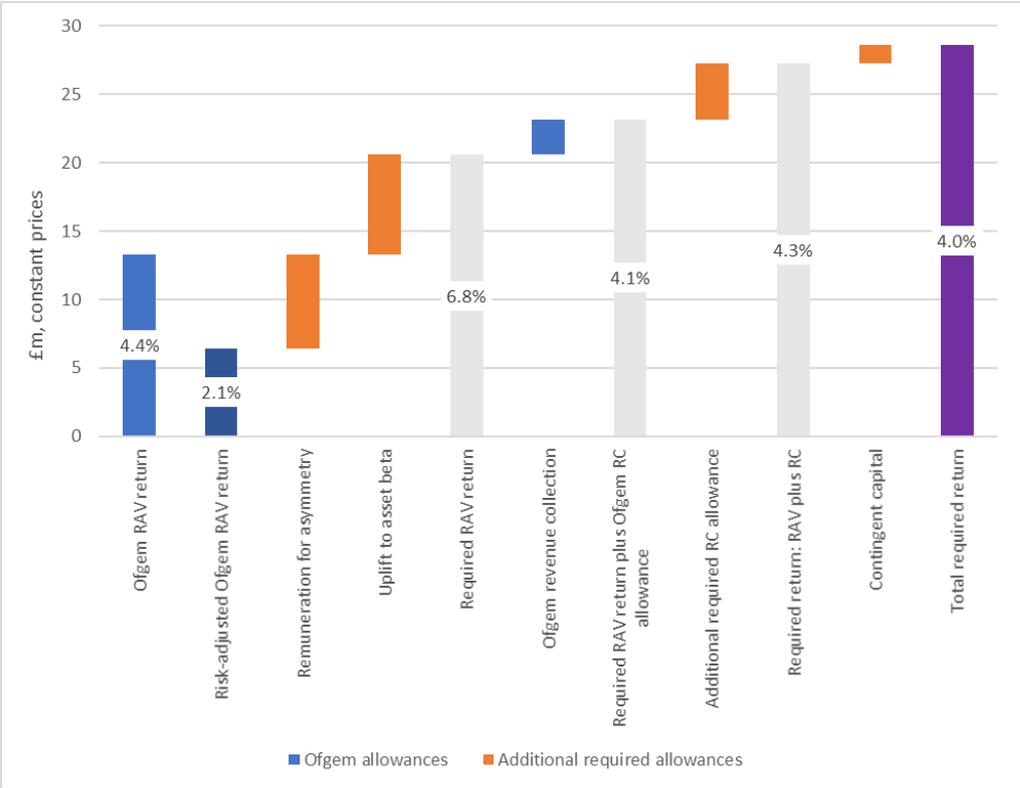
⁴⁰ This corresponds to the upper bound asset beta estimate set out in section 4.2, reflecting our preference for SONI as a comparator for NG ESO.

CEPA acknowledges that the revenue collection function generates a capital requirement, and that this requires remuneration. CEPA has estimated a capital base in respect of the revenue collection function of £260m, and a required remuneration of £2.6m per annum⁴¹. Adding this layer to the amended RAV return increases the capital base to £553m and the remuneration requirement to £22.5m per annum, resulting in a return of 4.1%.

As discussed in section 4.3, CEPA has underestimated both the scale of the capital requirement associated with the revenue collection function and the rate at which this capital will need to be remunerated. Correcting these errors adds £76m to the capital base and £4.1m per annum to the remuneration requirement. This results in a capital base on £639m, a combined remuneration requirement of £27.3m and a combined return on capital of 4.3%.

Finally, contrary to the views of its advisors, Ofgem has entirely ignored the requirement for NG ESO to hold contingent capital to cover downside risks. Adding the contingent capital requirement to the combined capital base results in a total capital base of £714m and a total risk-adjusted remuneration requirement of £28.6m. This represents a return on capital of 4.0%: considerably less than Ofgem’s estimated RAV return.

Figure 1: Summary of capital remuneration layers for NG ESO⁴²



A similar pattern emerges with respect to equity returns. NG ESO’s absolute required equity return is roughly twice the amount (£20.5m) that CEPA and Ofgem have estimated (£10.1m). However, the required return on equity is similar to Ofgem’s cost of equity estimate once all relevant sources of equity capital have been included – the small observed increase is fully attributable to the fact that CEPA has underestimated NG ESO’s RAV-related asset beta.

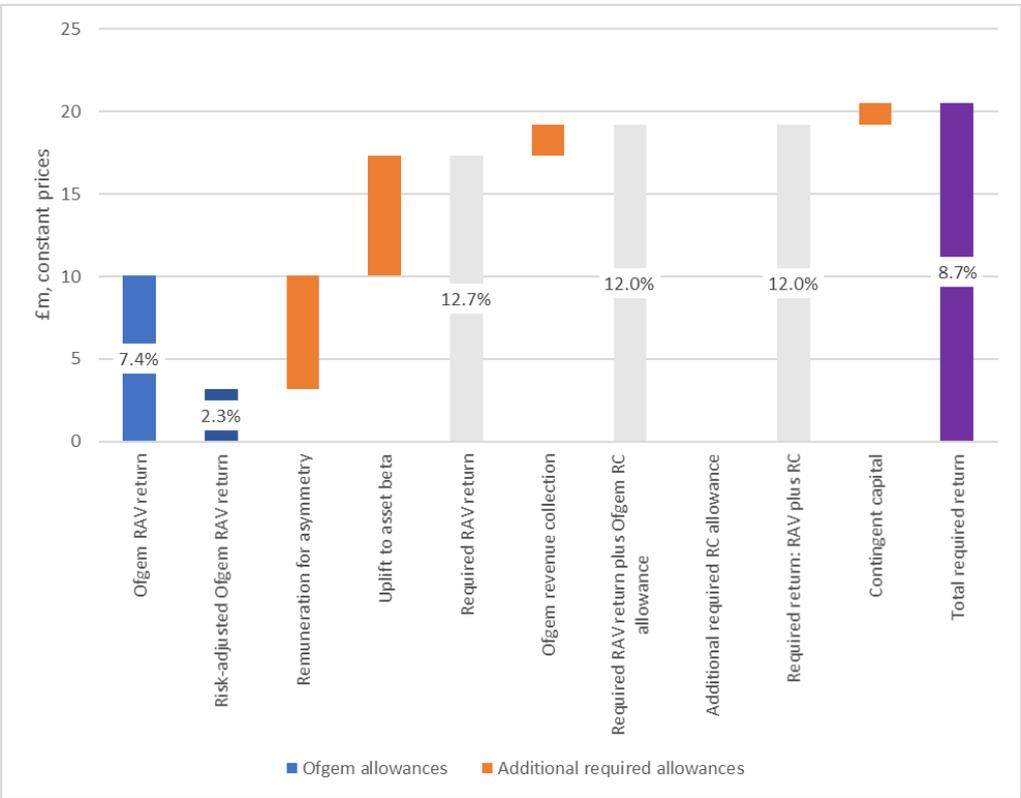
⁴¹ Based on the high end of Table B on p6 of CEPA’s report.

⁴² Note: percentages in boxes are nominal returns.

Ofgem’s RAV return includes a nominal equity return of £10.1m per annum, derived from the application of Ofgem’s nominal cost of equity of 7.4%⁴³ to NG ESO’s average regulated equity of £136m⁴⁴. NG ESO is subject to asymmetric risk, meaning that its expected return on regulated equity is 2.3%. The required compensation for the impact of asymmetry (£6.9m) accrues entirely to equity, and returns the equity return to 7.4%. The additional RAV return corresponding to the increase in the asset beta from 0.45 to 0.74 is fully attributable to equity, bringing the total equity return to £17.3m, and the equity return to 12.7%.

CEPA attributes £24m of its estimated revenue collection function capital base to equity capital, and attributes £1.9m per annum of the corresponding allowance to equity remuneration⁴⁵. Adding this layer to the amended regulatory equity set out above increases the equity capital base to £160m and the required equity return to £19.2m per annum. This implies a required equity return of 12.0%. Although Ofgem has underestimated both the scale and cost of required capital necessary to support the revenue collection function, the omitted capital and remuneration both relate to debt funding via the WCF. Therefore, the addition of this omitted capital and remuneration does not affect the required equity return. By contrast, the remuneration in respect of contingent capital is fully attributable to equity. The inclusion of contingent capital (£75m) and the corresponding required remuneration (£1.3m per annum) brings the required equity return to 8.7%.

Figure 2: Summary of equity remuneration layers for NG ESO⁴⁶



⁴³ This is based on a CPIH-real RAV return of 5.28% (as stated in Table 27 of the Draft Determinations) and a CPIH assumption of 2% during RII02

⁴⁴ This is based on the average RAV of £303m and a gearing assumption of 55%, as stated in Table 27 of the Draft Determinations.

⁴⁵ Based on the high end of Table B on p6 of CEPA’s report.

⁴⁶ Note: percentages in boxes are nominal returns.

5 Analysis of financeability

This section examines CEPA's approach to testing NG ESO's financeability, and is structured as follows:

- CEPA's analysis of financeability is summarised;
- The criteria that should be met in order for an entity to be considered financeable are set out, and contrasted with CEPA's financeability assessment;
- The importance of equity financeability is discussed; and
- NG ESO's equity financeability under the DD is considered based on key metrics.

5.1 Reprise of CEPA's analysis of financeability

CEPA has approached the financeability assessment from a conventional credit perspective. It provides an extensive description of Moody's Rating Methodology for Regulated Electric and Gas Utilities, and its initial view and subsequent update of NG ESO. It concludes from this that a rating of Baa1 is a "*manageable and realistic target – at least until there is a track record on the operation of the standalone regime for the ESO*"⁴⁷.

Based on Moody's rating assessment, CEPA highlights that the adequacy of liquidity is a key consideration for NG ESO, particularly in relation to NG ESO's revenue collection role. It further recognises that there is a link between the level of liquidity provision and downside risks in other parts of the business – should downside risk crystallise, it would in the first instance impact on the company's working capital. In this context, CEPA highlights Moody's assessment that the working capital facility could be used in this way to "*support several years of plausible under-recoveries and other downside scenarios*". CEPA concludes its report by satisfying itself that the DD together with the remuneration CEPA itself proposes provides sufficient liquidity to ensure NG ESO's financeability.

CEPA notes "*the importance Moody's places on potential support from the wider National Grid group*"⁴⁸ – implicitly acknowledging that the Moody's rating assessment does not constitute a credit analysis of the business on a stand-alone basis – but does not attempt to undertake an assessment of NG ESO on a stand-alone basis.

CEPA does not comment on equity financeability at any point in its report, which implies that it does not consider equity financeability to constitute a binding constraint on NG ESO's price control. Relatedly, Ofgem dismissed the relevance of equity financeability⁴⁹ as being inseparable from the issue of additional funding. Ofgem considered the question of additional funding on its own merits but chose not to carry out a cross-check in the context of equity financeability.

⁴⁷ CEPA, "RIIO-2: Electricity System Operator Returns", p15.

⁴⁸ CEPA, "RIIO-2: Electricity System Operator Returns", p15.

⁴⁹ Paragraph 5.56 of the DD.

5.2 Criteria for financeability and comparison with CEPA assessment

The financeability assessment constitutes a cross-check to ensure that the various components of the price control determination, when combined, constitute an investable proposition from a market perspective.

The criteria set out below follow logically from this objective. These criteria are contrasted with CEPA's approach:

Criterion 1: The regulator has an established framework for remuneration that duly recognises and fairly prices all components of risk and layers of capital

This criterion is, in effect, a restatement of the regulatory Finance Duty: the regulator has a primary statutory requirement to perform its regulatory functions "*having regard to the need to secure*" that the regulated companies "*are able to finance*" their authorised activities. In order to finance their activities, regulated entities must obtain debt and equity funding from the market on commercial terms. This is only possible if all required sources of financing are recognised and adequately remunerated under the regulatory framework.

Ofgem is correct that this criterion is closely related to the question of setting adequate allowances. However, the Finance Duty does not end once the regulator has set allowances. It must also construct tests that will provide a meaningful and internally consistent check on whether all capital providers under the notional financial structure would be willing to commit capital given the allowances that have been set. At a minimum, this means that the regulator must consider the investment proposition from the perspective of both debt and equity providers.

The requirement to consider equity financeability is particularly acute where the regulated entity under consideration is expected to source new equity in the period under consideration. Where this is the case, equity financeability is not merely an academic consideration, but a genuine and binding constraint on the business's ability to finance its functions. Even where this is not the case, equity financeability is important, since regulated entities are generally expected to reinvest a proportion of its equity return in the business to ensure the continuity of operations.

CEPA's assessment does not provide a meaningful test of this criterion because it does not test the financeability of NG ESO from an equity perspective. The significance of this omission is discussed further in section 5.3.

Criterion 2: Investors should be able to reasonably expect to earn the remuneration requirement

The financeability assessment is only meaningful if the financial projections that form the basis of the assessment constitute a realistic reflection of the business under the proposed price control arrangements. Specifically, the financeability assessment should be carried out based on risk-adjusted cashflows.

In order to ensure that this is the case, the regulator must seriously consider the balance of outcomes that are off the equilibrium path. This in turn requires a dispassionate consideration of scenarios at different probability levels (P90, P10 etc), If this reveals a material imbalance this should be reflected in adjustments to base case cashflows. Where

downside risks dominate upside risks, this should be reflected in a downward adjustment to base case cashflows. This criterion was well established by the CMA in the SONI appeal and also recognised in the March 2018 UKRN cost of capital study.⁵⁰

CEPA's assessment does not consider whether NG ESO can reasonably expect to earn the cashflows that are assumed in its base case. Rather, this is assumed as a matter of principle, based on its view of asymmetric risk discussed in section 3.1. CEPA is sufficiently confident in this assumption that it does not even present any credit metric projections upside or downside scenarios, let alone justify whether these scenarios are relevant and realistic. This falls far short of how a debt investor would approach the credit assessment of a prospective borrower, and hence CEPA's assessment cannot be considered to represent a robust credit assessment of NG ESO.

Criterion 3: regulatory provision is made for financial headroom to manage potential downside scenarios

Once base cashflows are appropriately risk-adjusted, the regulator should also consider the consequences of a breach of key thresholds under downside scenarios. Where the regulator expects the business to procure new equity to cover losses, provision must be made to cover the costs of doing so in order for the financeability assessment to be internally consistent.

In general, obtaining new equity on commercial terms is costly, and at least partially scales with the quantum of equity that is required. More importantly, there can be no guarantee that the required quantum of equity could be obtained from the market at the precise time that it is needed, regardless of the expected return.

A more appropriate means of ensuring that new equity is available is to enter into arrangements with third parties with stronger balance sheets such that these counterparties can be called upon to inject new equity on demand: i.e., contingent capital. This promotes value for money to consumers, since the required returns are likely to be small relative to committed equity capital, and will not result in costs being incurred in relation to market access. At the same time, contingent capital is not costless: a commercial third party would not enter into any such agreement without compensation, even if there was a realistic prospect that any such capital would eventually be recovered once injected.

Where it is assumed that the regulated entity will rely on contingent capital to continue operations under plausible downside scenarios, this contingent capital must be priced and remunerated.

As indicated above, CEPA does not present any scenarios other than its base case forecasts. This means that CEPA lacks any means of examining potential equity requirements under a downside scenario, let alone considering how these might be met and whether this is consistent with the proposed price control arrangements.

Overall, CEPA's financeability assessment does not allow for a meaningful test of any of the three criteria outlined in this section, and hence cannot be considered to represent a robust assessment.

⁵⁰ Wright et al (2018) UKRN paper: Estimating the cost of capital for implementation of price controls by UK Regulator. A report commissioned jointly by the CAA, Ofcom, Ofgem and the Utility Regulator, p.6

5.3 The central importance of equity financeability for NG ESO

Ofgem's general and long-established approach has been to carry out financeability assessments in addition to considering remuneration requirements on a bottom-up basis, or on their own merits.

For capital intensive networks, new finance is generally debt finance. The dynamics of network finance means that plausible levels of variability in equity profitability can usually be accommodated by flexing dividend policy. Credit rating agencies do not need to rely explicitly and materially on the availability of financial support from anyone else, such as the network's shareholder group.

The dynamics of ESO finance is different. This is because it is both asset light and exposed to variability in investment and liquidity requirements that are large relative to its RAV. The availability of additional financial support is rather more relevant in NG ESO's case, and is explicitly relied on by Moody's in its 2019 rating decision. It is relevant that the DD ESO financial model forecasts a requirement for new equity of £58.6m in nominal terms over the five-year period. This is more than 60% of the post-Wokingham regulatory equity at the start of the period before taking account of any potential downside outcomes.

It is therefore necessary to consider what conditions should exist for equity financeability.

5.4 Equity financeability metrics

The central importance of equity financeability for NG ESO which we identify above means that a financeability assessment needs to go beyond conventional credit metrics.

While we stress again that equity financeability is more than just about numbers, we identified under Criterion 1 that equity financeability metrics, specifically profitability metrics, form an important part of a financeability assessment.

KPMG's November 2019 report identified a number of possible metrics for this purpose and described how they had been used by the CMA in the SONI appeal.

Profitability metrics are logically structured with a profit-related measure as the numerator and some measure of business activity as the denominator. EBIT is naturally the first choice for a profit-related measure and turnover is the first choice for a measure of business activity. A suitable benchmark for such a metric would then be derived from considering the metric's levels in businesses with a risk profile that is comparable to the ESO.

It is striking that Ofgem⁵¹ sees a weakness of an EBIT margin metric as depreciation being included "in the denominator but not in the numerator". Were depreciation included in the numerator, it would no longer be a measure of profitability⁵². Were depreciation to be excluded from the denominator, it would no longer be a measure of business activity analogous to turnover in the comparator businesses used to calibrate an EBIT margin

⁵¹ Paragraph 5.57 of the DD.

⁵² EBITDA metrics relate more to cash flows and can, of course, be useful credit metrics. Appendix 8 of KPMG's November 2019 report for NG ESO used rating agency EBITDA metrics to translate into an equivalent EBIT margin of 10-15%.

benchmark. Seeing this as a weakness reveals a lack of understanding around the relevance of profitability metrics in an equity-weighted financeability assessment.

Equity financeability metrics are, naturally, predominantly earnings related. Ofgem seems to have reached the view that it does not need to consider these metrics since it has considered the need for earnings on its own merits.

In taking this approach, Ofgem is forsaking the reassurance for itself that its proposed package is well calibrated. It would also be denying the reassurance for potential providers of new finance to the ESO were it a standalone company. Such providers of new finance would likely not limit their consideration to the regulator's technocratic process used to determine the earnings requirement from the bottom-up. They would stand back and consider the prospective earnings levels with those in companies with similar financial and business characteristics.

Ofgem's failure to do so is a flaw in its proposals.

5.4.1 EBIT margins vs. benchmark evidence

The NG ESO business plan highlighted the relevance of EBIT margins, citing advice from both Oxera and KPMG. Oxera carried out a wide-ranging benchmarking exercise and derived a range of 7-12% for the EBIT margin. KPMG's analysis focused on a tighter range of 62 comparator companies with similar financial and business characteristics, together with Smart DCC and the CMA determination for SONI. KPMG highlighted that the EBIT margin for SONI derived from the CMA determination was 10.3% and concluded that a benchmark for EBIT margins on controllable revenues should be no less than 10%. NG ESO identified 10% as its reference point for EBIT margins.

In the DD, Ofgem has reduced the scope of NG ESO's revenue collection activity but NG ESO still retains an incentive risk profile with heightened risk features relative to SONI's regime at the time of the CMA determination, notably the evaluative ESORI arrangement. A benchmark EBIT margin of 10% remains appropriate.

PCFM year ending	31 Mar 2022	31 Mar 2023	31 Mar 2024	31 Mar 2025	31 Mar 2026
EBIT post WCF	8.6	10.6	10.4	13.0	14.8
Base revenue	228.4	249.6	242.6	261.8	274.3
EBIT margin	3.8%	4.2%	4.3%	5.0%	5.4%

These margins are very substantially below the benchmarked level of 10%.

5.5 Conclusion

It is relevant to recognise that the DD proposals provide for a lower level of risk exposure than KPMG and Oxera would have anticipated in their analysis for NG ESO. On the other hand, the changes in Ofgem's proposals do not fundamentally change the character of the business and may not materially have affected the advisors' judgements around the population of potential comparable businesses used to derive benchmarks. It is also relevant to note that KPMG saw the 10% level as a bottom end of the range.

Given the marked shortfall in these key metrics, it becomes more important for Ofgem to provide reassurance to potential investors (were the ESO to be a standalone company), and to itself and other stakeholders, that its overall package is well calibrated.

Ofgem might have been justified had it demonstrated that its methodologies, if they were applied to the NG ESO framework broadly as anticipated prior to its DD proposals (for example, consistent with the existing ESORI arrangement):

- would have generated metrics broadly consistent with the benchmarks, and
- the metrics now in prospect can be reconciled to those benchmarks with reference to the demonstrable risk reductions that Ofgem now proposes should be in place.

Ofgem has not carried out such a justification. As a consequence, its proposals are unsafe.

Appendix 1 Scope of work

The scope of work commissioned by NG ESO is set out below:

The report will systematically review and assess the methodology and analysis applied by CEPA to assess NG ESO's overall risk exposure, remuneration of capital employed, and financeability tests.

The analysis will also seek to show how correcting any potential errors by CEPA would lead to different conclusions. This part of the response will seek to expose and challenge the core evidence that Ofgem relies on, where it is deficient. It will constitute a bottom up approach, on Ofgem's grounds, to consider and challenge the basis on which the DD conclusions have been derived. It will aim to highlight any potential inconsistencies or errors, and comment on whether its findings can be relied upon to determine overall remuneration and conclude on financeability.

The overall objective will be to assess and, where supported by the results of the analysis, put forward the case for increased returns, including securing additional remuneration beyond returns on RAV, and reduce risk of cost disallowance.

Appendix 2 CEPA's relative risk analysis for networks

CEPA carried out analysis of risk drivers for its assessment of relative risk. This is contained in Chapter 2 of its 'RIIO-2: Beta estimation issues' report, included as an annex to the DDs. The analysis is primarily carried out in the context of energy networks. This analysis then provides the foundation for CEPA's assessment of risk for the ESO.

It is important to understand the structure of CEPA's relative analysis for networks for us to comment on its subsidiary analysis for the ESO.

A2.1 Summary of CEPA's relative risk analysis for networks

CEPA's relative risk analysis for networks is summarised in the table below.

Summary of CEPA's risk driver analysis for regulated networks

Market risk	
Demand	Natural monopoly with low income elasticity of demand, any risk is further neutralised by revenue cap. The distinct demand risk features of regulated aviation businesses are distinct from networks.
Cyclicality of investment	Some systematic drivers of investment, directionally unclear and mitigated by used of RAV and periodic resets
Political	Regulation operates to dampen systematic risk factors, renationalisation risk has receded
Market dynamics	Longer run developments could have significant impacts, but regulation would still have dampening effect
Price control building block risk	
Incentives (expenditure and outputs)	Directional impact of expenditure mismatches is unclear, but subject to regulatory protections and mitigations. Economic growth supporting productivity gains to improve incentive performance could be a systematic factor
Financing	Potentially a source of systematic risk, but mitigated by CoD and CoE indexation
Pensions	Potentially a source of systematic risk, but mitigated by regulatory deficit funding arrangements
Tax	Regulatory resets under price controls likely to mitigate any exposure
Firm structure risk	
Operational gearing	In absence of demand risk, unlikely to be a systematic risk factor
Asset intensity	Asset intensity will tend to dilute systematic risk in activities over higher

The overarching sense of CEPA's analysis is that there is little differentiation between drivers of systematic risk and that these are in any event mitigated or dampened by the regulatory regime. While it identified the presence of demand risk for regulated aviation businesses, it found no particularly compelling source of systematic risk for networks.

Reflecting this, CEPA's beta estimation report did not indicate significant differentiation between drivers of systematic risk for networks. The simple inference, that there may be higher levels of systematic risk in businesses with higher levels of total risk, lies behind the key metric it derives of incentive range as a percentage of the RAV.

A2.2 Expenditure mismatches

While CEPA acknowledged that the directional impact of expenditure mismatches on price control building block risk is unclear, it followed with an unsupported comment:

“Overall, we would expect there to be a positive beta relative to scale of total expenditure, especially where cost inflationary impacts are accounted for within the regulatory framework”

A systematic component of risk in expenditure mismatches against ex ante expectations would require there to be a systematic driver in what a business spends, either in what inputs it buys or the price it pays for those inputs. It is difficult to identify much of a directional impact on what a network business would buy, although higher levels of demand might require more inputs, which would tend to have a negative effect on beta for a company subject to a revenue cap. Systematic factors would be expected to have a directional impact on prices, but a regime indexed for general inflation would tend to neutralise such effects in real terms. Exceptions would arise for disproportionate exposure to demand-sensitive markets such as construction markets, where higher levels of demand might be expected to correlate with higher prices, again signalling a negative effect on beta for the purchasing network.

A2.3 Financing risk

CEPA expresses the view that financing risks could be a source of systematic risk, but this would be mitigated by CoD and CoE indexation.

The CoE index replaces the relatively stable historical approach of setting a long-term estimate of the RFR with an annually updated spot index. For a 20-year investment horizon investor able to invest in a gilt with a certain return, the outturn risk-free component of the return from the CoE index would be highly uncertain with strong systematic factors. The direction of those systematic factors may not be clear, but it seems perverse to suggest the index would have the effect of mitigating exposure to systematic risk.

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