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Dear Jonathan,

Energy is the lifeblood of our economy and society. As the ESO for Great Britain (GB), we hold a unique position at the heart of the nation's energy system. The development of a new regulatory framework for RIIO-2 is an unprecedented and exciting opportunity to drive the ESO to deliver benefits for consumers during a time of significant change.

Supported by a new and bespoke regulatory model, we will facilitate the transition to a zero-carbon power system, helping to achieve the UK's recent commitment to net zero emissions by 2050. Alongside this, we will continue to deliver energy safely and reliably and drive value for consumers in everything we do.

We are different to the network-owning companies that are also regulated under the RIIO framework: we are a relatively asset-light business delivering a wide variety of services, exposed to risks that are relatively large compared to the size of our business. It is essential that our funding model and broader regulatory framework reflect the nature of our business, and enable us to attract both debt and equity investment, so that we are able to deliver for consumers.

Having the right funding model in place for RIIO-2 is essential to enable us to drive real change, competition and innovation across the energy system. Our analysis shows that the traditional model for calculating allowed returns for the network companies, based on applying a weighted average cost of capital (WACC) to the value of the company's regulatory asset value (RAV), may not ensure the ESO is financeable over the RIIO-2 period and beyond. This is because the ESO has a small RAV relative to the scale of operations, risks and total assets used by the ESO.[1]

We believe there is a shared desire between Ofgem, the ESO and stakeholders to design a funding model and framework for the ESO that fulfils the following criteria:

- Drives the behaviours that allow us to invest and innovate on behalf of consumers to drive benefits across the whole system
- Is appropriate for the ESO business and the activities we perform
- Is flexible and sustainable for the future
- Ensures we are financeable as a standalone, legally separate business

Funding model consultation options

The move away from the layered model using margins – consulted on by Ofgem in December – is a step backwards in our joint efforts to design a funding model for the ESO that meets the objectives set out above. We believe the two base options (RAV*WACC and 100% fast money) set out in Ofgem's current consultation will not fulfil the above criteria and will not drive us to be the ambitious ESO that stakeholders want.

Specifically, the two base funding models in the consultation pose the following risks:

- Driving unduly cautious behaviour due to a lack of financial resilience, by not recognising the varying nature or scale of ESO activities and associated risks. For example, this could lead to us only contracting with large, established companies to deliver new IT projects, at the expense of trying more innovative approaches with smaller or more agile companies.
- Not providing sufficient liquidity to support investment or absorb shocks or downside scenarios. Similar to the point above, management time, effort and potentially costs would be disproportionately spent on

[1] The RAV is small in relation to the comparatively high level of costs we manage (e.g. opex costs are c.73% of RAV for the ESO compared to 1-2% for electricity transmission and 7-10% of electricity distribution companies)

minimising the risk of such downside scenarios, limiting the time and focus available to drive down (the much larger) external costs. This would ultimately be to the detriment of consumers.

- Being unattractive to debt and equity investors, who provide essential injections of capital to enable the ESO to make investments on behalf of consumers.
- Being unable to secure an investment grade credit rating, as required by our licence.

We do not believe that either of these models would ensure a financially sustainable business.

Our proposed model

Given these issues, we favour a variant of Ofgem's consultation option of **Model 1 (RAV*WACC) with margins**. This seeks to ensure we can achieve our shared aims, and is based on the following elements:

- RAV*WACC element for capital employed – to recognise the capital we invest in our IT infrastructure and tools used to underpin the services we deliver, and to provide funding for the big investments we need to make in line with the lifetime of these capital investments (5-10 years). The WACC should recognise the specific and unique characteristics of the ESO – it should not be the same as the WACC proposed for the network companies.
- Margin on operational costs – a return to reflect our risks and provide greater capacity for the ESO to manage risk, innovate and invest so that we can deliver our ambitious, stakeholder-led business plan. The appropriate margin will depend on the activities being remunerated and the associated risks.
- Margin on external costs – a return to reflect and scale with the risks we are exposed to in our industry revenue management role. Even with the cost of a working capital facility (WCF) passed through this is not a zero-risk activity. Our analysis, and regulatory precedent, suggests that around 0.5% might be an appropriate margin.
- An incentive scheme with clearly defined outputs and an upside potential to drive positive behaviour and place a strong incentive on the ESO to deliver additional benefits for consumers. A downside may be appropriate to provide a stronger incentive.

In addition to meeting the five criteria set out above, our favoured model has a number of benefits:

- Encourages ambitious behaviour by recognising the varying nature of the activities undertaken by the ESO and the associated risks, enabling innovation and investment on behalf of consumers.
- Is adaptable to future changes where activities can be added or subject to competitive tender, with remuneration able to adjust to these changes.
- Ensures the ESO is financially sustainable and can maintain an investment grade credit rating.

This model has been supported by the majority of stakeholders in extensive engagement we have undertaken over the past eighteen months, including members of industry, Citizens Advice and those with a wider interest. It is also consistent with recent regulatory precedent in the case of the Competition and Market's Authority's (CMA) 2017 ruling on System Operator Northern Ireland's (SONI) price control appeal, as well as benchmarking of the ESO against organisations that carry out similar roles in other markets. The relevance of these precedents and benchmarks is set out in further detail in two attachments to this response:

- Analysis of the CMA determination in relation to SONI (Appendix A to this document)
- KPMG independent report into the ESO business, financeability and price control framework (separately attached)

Designed with the appropriate levels of WACC and margins, we believe our proposed model is reasonable, financeable, protects consumers from windfall profits and will enable us to be the ambitious business stakeholders are calling for. It reflects the nature of the ESO, in line with regulatory precedent, and will enable and drive us to deliver maximum benefits for consumers.

We note Ofgem's timeline for publication of a decision on the ESO's funding model at the same time as potentially consulting on a financeability methodology for the ESO (in late summer). We strongly believe this further consultation is necessary, and have concerns about the ability to make a decision on an appropriate funding model without assessing financeability. It should be noted that the late timing of this further consultation creates a significant challenge for the ESO in delivering an assured and complete business plan that has been fully reviewed by stakeholders by 9 December.

We would welcome further discussions with Ofgem on our funding model and ESO financeability as it considers responses to this consultation, to ensure that the agreed model can meet the needs of Ofgem, stakeholders and the ESO business.

Subject to an appropriate funding model being in place, we estimate that the proposed new activities in our draft RIIO-2 business plan[2] could generate net benefits of around £2.3 billion for consumers over the five years of RIIO-2 – delivering £6 of new benefits for every £1 of additional investment in the ESO. The financial benefit figure we have estimated for consumers is likely to significantly understate the total benefits that the ESO will drive. This is because it only includes the benefits that can be quantified, and does not consider the wider benefits of our core role – providing a safe and reliable supply of electricity to underpin an economy worth £2 trillion. We deliver all this for a cost equivalent to less than £1 on a consumer's annual energy bill.

[2] ESO RIIO-2 Draft Business Plan, July 2019 https://www.nationalgrideso.com/document/147026/download

Contents

ESOQ1: Which funding model would most effectively remunerate the ESO and support its financeability? Would either model have any risks or unintended consequences that you can foresee? Are there other funding models you think would be more appropriate?

We believe that the option of Model 1 with margins – what we call a 'layered' model – would most effectively remunerate the ESO. It provides the ESO with the greatest flexibility to respond to industry needs and take opportunities to deliver greater consumer benefits. The other models are more likely to drive risk-averse behaviour due to the lack of financial flexibility inherent in their design, which does not recognise the varying nature of the ESO's activities. We believe that our proposed option best supports financeability.

1.1 The ESO is different, and needs a framework to reflect this

One of the overriding objectives of regulation is to simulate the outcomes that would be observed if the services we provide were to be procured under competitive market conditions.

The ESO is a legally separate, for-profit business. It is an asset-light, people and services business unlike the network-owning companies also regulated under the RIIO framework. Ofgem acknowledged this in its December 2018 sector-specific consultation: *"The ESO, unlike other sectors, is relatively asset-light. Therefore, a RAV-based remuneration model may not be appropriate or necessarily deliver the most efficient outcomes."*[3]

The ESO is also different to the majority of system operators who are not-for-profit, integrated with transmission businesses or state-operated. As such there are limited direct regulatory precedents for the GB ESO. Our closest comparator is SONI, which provides an electricity system operator function in the UK and undertakes many similar activities to the ESO. There is useful recent precedent relating to the design of SONI's price control framework that we can look to. Analysis of the CMA's determination in relation to this control is set out in Appendix A. To find additional precedents or comparator organisations it is useful to look more broadly at the attributes of the ESO and explore where they occur in other industries or jurisdictions. These are explored in KPMG's independent report that accompanies this response.

The need to apply a different funding model to effectively finance and remunerate the ESO has been recognised by Ofgem in its RIIO-2 publications to date. As a result, Ofgem has made a decision to introduce a separate, new price control framework tailored to reflect the unique nature of the ESO.[4]

There are key differences of the ESO from the network companies, including:

a) We are an operational expenditure (opex)-heavy business

b) The nature and scale of the risks we face are different

c) Financeability for the standalone ESO has specific challenges

We describe below how each of these differences affect the decision to select an appropriate funding model.

a) We are an opex-heavy, services business

We undertake three main areas of activity that are listed here – these are further described later in this response:

- Operating and balancing the system – we balance the electricity system in real time, and facilitate and run balancing markets in the short-medium term, to ensure the lights stay on. This drives the need for most our capital expenditure (capex) investments in IT systems, but also requires highly-skilled and experienced people.
- Market and industry services – we perform a wide range of activities to support the wider system and industry, including optimising long-term network planning, administering four industry codes and standards, being the delivery body for Electricity Market Reform (EMR), producing future scenarios and outlooks, and fostering innovation and whole system solutions. This predominantly relies upon the skills and expertise of trained, experienced people and requires few tangible assets.

[3] Ofgem's RIIO-2 Sector Specific Methodology Consultation, ESO Annex, Chapter 7 https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-2_eso_annex_0.pdf

[4] Ofgem's RIIO-2 Framework Decision, paras 3.79-3.83 https://www.ofgem.gov.uk/system/files/docs/2018/07/riio-2_july_decision_document_final_300718.pdf; Ofgem's RIIO-2 Sector Specific Methodology Decision, ESO Annex, p.4 https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodoloy_decision_-_eso.pdf

- Industry revenue management – we are responsible for collecting, managing and distributing over £4bn of use of systems charges annually for TNUoS[5] and BSUoS[6], as well as administering Connections Charges. We pass the majority of this cash onto other parties, which creates significant cash flow and profit volatility for the ESO.

The funding model needs to recognise and be flexible to the varying nature of these activity areas, their different attributes and risks.

b) The nature and scale of the ESO's risks are different

Although there are many common risks between us and the network companies (e.g. general company risks), there are key differences in how these affect the ESO:

- Exposure to significant cash and profit volatility risk in our industry revenue management role, which is not correlated to the size and evolution of our RAV.
- The impact of cost disallowance is greater due to our smaller size compared to the network companies, and represents a downside only.
- Higher operational gearing, leading to greater impact of shocks and downside scenarios.

Below, we describe the key risks associated with the inherent characteristics of the ESO and the implications of framework decisions made so far.

Industry revenue management role risks – volatility

The ESO is significantly exposed to profit and cash flow volatility as part of our industry revenue management role. In performing this role, the ESO must adhere to the requirements set out in two electricity industry codes: the Connection and Use of System Code (CUSC) and the System Operator Transmission Owner Code (STC). These set out how cash flows are to be calculated, the security that can be taken against them, and the timing of these flows. The ESO is responsible for ensuring that market participants are paid for the services they provide irrespective of whether we have collected sufficient revenues from system users to meet this requirement. This introduces timing misalignment between outgoing and incoming cash, and therefore a systematic liquidity risk to the ESO across several network charges; the scale of which lies outside the ESO's control. As a standalone company, we may not be able to provide the liquidity required to industry at any given point in time. This risk applies to several network charges, including TNUoS (c.£2.7bn transacted annually); BSUoS (c.£1.3bn transacted annually) and Connections Charges (c.£0.2bn transacted annually).

As these risks are not correlated to our RAV, the traditional RAV*WACC approach appears to be less appropriate for remunerating them. The fixed nature of the return on RAV may lead to an under- or over-remuneration of the ESO because returns do not scale with the risk, e.g. the regime would continue to provide the same returns even if the industry revenues being transacted were to materially change. This is intuitively incorrect, as investor perception of the ESO is significantly affected by the resulting change in volatility and need for access to capital facilities. It was noted by the CMA that investors are "*not indifferent"* to whether the organisation holds this role or not.

Cost disallowance risk – inherent asymmetry

We understand that, whichever model is decided upon for the ESO, efficient costs will be passed through to consumers without a sharing factor. Ofgem also confirmed in its Sector Specific Methodology Decision that cost disallowance for the ESO would remain in line with the other RIIO companies, i.e. subject to condition C16 of our licence[7]. The principle of this is that 'efficient' costs will be allowed to pass-through and will not be disallowed.

We completely agree that Ofgem should have the ability to review the efficiency of costs in order to protect the interests of consumers. However, its ability to do this on an ex post basis means that the ESO investor holds a downside-only risk where we are considered inefficient, as well as specific downside in the continuation of the Black Start disallowance scheme (of up to 10% of Black Start costs).

The passing through of costs is considered by Ofgem to lower the risk for the ESO. However, there can be differences of opinion on what is 'efficient' at a point in time. It is also important to note that disallowance can

[5] Transmission Network Use of System charges
[6] Balancing Services Use of System charges
[7] Standard Licence Condition C16 (Procurement and use of balancing services) of the National Grid Electricity System Operator licence says *"The licensee shall co-ordinate and direct the flow of electricity onto and over the national electricity transmission system in an efficient, economic and co-ordinated manner."*

be applied to all of our internal and external balancing costs, which are on a much larger scale than the size of our RAV.

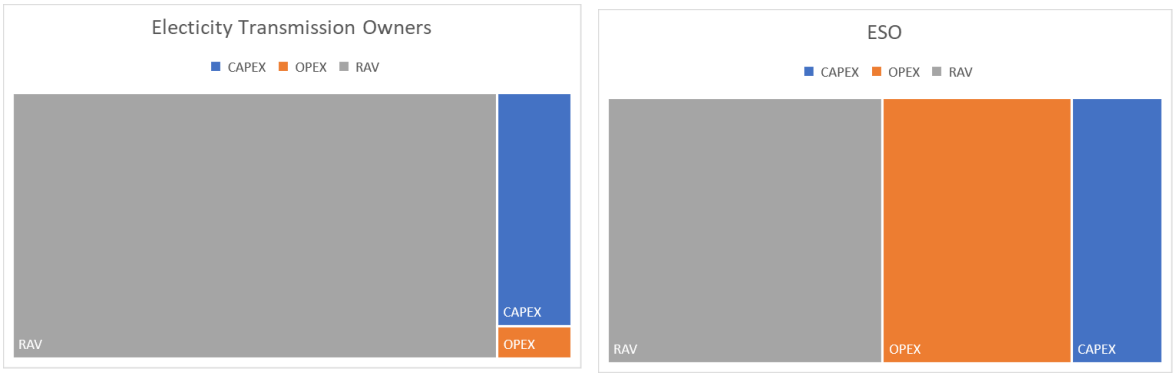
There are numerous examples where regulators and companies have had such differing views. A specific example for the ESO is the disallowance of Black Start contract costs from the Balancing Services Incentive Scheme (BSIS) result for FY17. Ofgem did not allow the ESO's actual costs to be included in the target cost ex post, because it was considered that they were foreseeable at the time the relevant ex ante forecast was made. Ofgem may wish to provide comfort that it would not apply a similar disallowance in the future, but the use of the general disallowance approach would not prevent it from reoccurring, and the size of historic disallowances represent a different scale of risk to the standalone ESO.

Disallowances have typically been around 0.5-1% of RAV for network companies and 15-20% on major projects. While the network companies invest substantial amounts of money, these are typically a small proportion of the underlying RAV of their businesses. A typical disallowance of 15-20% on an individual major project within our RIIO-2 portfolio could translate to a disallowance for the ESO of 6% of our RAV. We would continue to take the risk in buying services from the market of around £1bn p.a. and could also be investing over 50% of our current RAV per annum to transform the ESO to deliver what stakeholders have told us they want. Ofgem must recognise that there can be differences of opinion on what is efficient and that this is a risk that we bear, at a scale that is disproportionate to the underlying business we operate.

The different financial scale and make-up of the ESO – operational gearing

The network companies have a large amount of capital directly employed that is supported by a large tangible asset base; by contrast, the ESO's capital is not fully reflected in our RAV, but relies on working capital and additional equity capital availability.

Figure 1



In practice, as the charts above illustrate, the ESO's profile does not look like those of the network companies; it looks more similar to service-based businesses. This means that our ability to absorb shocks is proportionately lower than the network companies' due to the lower returns in relation to our expenditure.

In considering the WACC component of the model, we would expect Ofgem to take notice of other regulatory decisions on the same issue: notably for SONI where the asset beta was increased from 0.45 to 0.6; and for EirGrid where there was an application of an additional margin.

The funding model needs to recognise each of these potential shocks and downside scenarios; it must address the asymmetry and scale of risks held by the ESO, using an appropriate WACC and the application of margins.

c) The ESO must be financeable as a standalone, for-profit business

Whichever funding model is put in place, it must ensure that the ESO is financeable to deliver the ambitious plans our stakeholders want.

The tripartite agreement in 2017 between Ofgem, Government and National Grid was to legally separate the ESO from the National Grid Electricity Transmission Owner business, but keep it within the NG Group (a for-profit organisation). This was agreed as the model that would best deliver for consumers.[8] Ofgem has confirmed that RIIO companies will be assessed for financeability on a notional company basis[9]; therefore, the

[8] Joint Statement on the Future of Electricity System Operation https://www.ofgem.gov.uk/system/files/docs/2018/01/joint_statement_on_the_future_of_electricity_system_operation.pdf
[9] Ofgem's RIIO-2 Sector Specific Methodology Decision, Finance Annex, paras 4.21-23 https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf

ESO's funding model must enable us to be financeable as a standalone business. There should be no financial reliance of the ESO on the NG Group, whether explicit or not.

Both debt and equity investment are needed to provide the ESO with the capital necessary to deliver our activities and services. To assess the ESO's financeability, we must look at several aspects of the business and how we perform in different scenarios in relation to investor requirements. We have grouped these into the following areas:

- Credit metrics and rating agency assessments – how credit metrics perform in relation to rating agency thresholds, both quantitative and qualitative.
- Liquidity requirements of the organisation – whether the business can meet cash requirements on an ongoing basis to allow the business to deliver activities in the interest of consumers.
- Equity financeability – whether the level and timing of returns are consistent with the ability to access equity capital markets as required.
- Ability to withstand shocks – whether the organisation can continue to meet the above tests under reasonable shock or downside scenarios.

We also believe it is important to cross-check the framework and the different potential models against regulatory precedents and industry benchmarks. We propose that this can be assessed based on a profitability metric in the form of an EBIT margin on the ESO's costs.

EBIT margin can be assessed against either operational or total costs, and contains more publicly available information than other metrics, making it a more flexible tool to cross-check across different companies; regulated and non-regulated.

Given the context and features of the ESO's business, we anticipate some financeability challenges for the notional company under the two base funding model options Ofgem is consulting on. We expand on these later in our response to this question.

The ESO has a licence obligation to use all reasonable endeavours to ensure that we maintain an investment grade credit rating. The legally separate NGESO Ltd obtained its initial rating in March 2019. Moody's Investors Service (Moody's) assigned a rating of Baa1 with a stable outlook to the ESO as an initial rating[10], but noted the following key constraints:

- The ESO's exposure to temporary cash outflows due to our industry revenue management role and the potential size of these relative to our RAV;
- Ongoing changes to the ESO's regulatory framework, including the transition to a margin-based funding model where no guidance has yet been provided by Ofgem on the margins; and
- Subjective assessment of the ESO's performance through the existing incentive framework.

It is important to note that this rating includes an uplift related to Moody's assigning a high likelihood of parental support should it become necessary to maintain the ESO credit quality. A clear implication of this is that the ESO standalone credit rating would not be strong investment grade (and possibly not even investment grade). It is also worth noting that Moody's used a different methodology to the one used to rate transmission networks: it used the Regulated Electric and Gas Utilities Methodology rather than the Regulated Electric and Gas Networks Rating Methodology.

The funding model needs to address the ESO's financeability challenges, which are substantially different to those for the network companies. It must recognise the importance of equity financeability to the successful delivery of the ESO's business plan.

1.2 Summary of ESO assessment of consultation options

Taking into consideration the type of business the ESO is, we have assessed the two base funding models Ofgem is consulting on, as well as our proposed variation of Model 1 with margins. The table below summarises our assessment, with further explanation set out in the rest of our response to this question.

[10] Moody's initial rating https://www.moodys.com/research/Moodys-assigns-Baa1-rating-to-National-Grid-Electricity-System-Operator--PR_396553

Figure 2

Assessment criteria	Model 1: RAV WACC	Model 1 with margins (Layered model)	Model 2: 100% Fast
Drives the behaviours that allow us to invest and innovate on behalf of consumers	• Drives cautious behaviour due to a lack of financial resilience and failing to recognise the varying nature of activities • Potential for a capex bias depending on detail of totex regime	• Encourages ambitious behaviours by recognising the varying nature of activities • Avoids biasing spending decisions between capex and opex	• Drives cautious behaviour due to no return; financial shocks would require immediate support from equity investors • Avoids biasing spending decisions between capex and opex
Appropriate for the ESO business and the activities we perform	• Does not recognise or scale for range of activities • Does not remunerate the risk of transacting large volumes of industry revenues • Does not align with regulatory precedent for system operators	• Recognises range of risks and can scale to reflect the volume of activity • Aligned to regulatory precedent deployed by EirGrid and determined by CMA for SONI	• Does not remunerate risks • Increases charges in the short-term for customers and consumers • Current customers and consumers bear 100% of the capital expenditure in the year it is spent • No GB precedent
Flexible and sustainable for the future	• Inflexible to future changes, as the return is not aligned to the range of activities • Majority of stakeholders do not support	• Adaptable to future changes, where services can be added/competed with specific margins applied • Supported by industry, consumer bodies and wider stakeholders	• Due to no ability to absorb shocks or downside scenarios, this is not a financially sustainable model
Ensures we are financeable as a standalone business	• Does not provide sufficient liquidity to support additional investment or absorb shocks/downside • Does not enable financeability without a significant increase in WACC • Unattractive to equity investors	• Allows greater targeting of returns to strengthen financial metrics to account for shocks/downside • Attractive to both debt and equity investors • Some additional complexity in setting both WACC and Margin	• No ability to absorb shocks/downside • Tax inefficient: customers will fund greater tax liability in short-term due to near-term profits • Relies on 100% equity financing, but not attractive to equity investors due to absence of return

1.3 The ESO's proposal – Model 1 with margins (layered model)

We believe the best model for the ESO is a form of layered or hybrid model that includes a RAV*WACC component, a margin on operational costs and a margin on external costs. This is a variant of Model 1 in Ofgem's consultation, with margins included to enable the financeability of the ESO and our ability to innovate, evolve and invest to deliver benefits for consumers. We explain our reasoning below.

a) Model 1 with margins (a layered model) is appropriate for the business

A layered model tailors different approaches to different activities. The ESO delivers a wide range of activities and services, which involve varied types of expenditure and types and levels of risk. We undertook research last year to consider and assess several potential funding model approaches for the ESO, summarised in our response to Ofgem's Framework Consultation in May 2018[11] and a thought-piece we published in October.[12] Our analysis of these options, which included a RAV*WACC model, concluded that a layered model would be best suited to the ESO business. This has been strongly supported by stakeholders in our engagement with them throughout our assessment, through workshops, bilateral meetings, webinars and responses to our thought-piece.[13]

A layered model can include a RAV*WACC element; indeed, we advocate this to reflect the capital we invest in our essential IT systems. Therefore, we support a variant of Ofgem's Model 1, with the addition of margins on our opex and on the external costs we transact, to properly reflect our different activities and risks. Ofgem commissioned a report from the consultancy Reckon in June last year into funding model options for the ESO, which recommended a similar hybrid approach, with the ability to tailor aspects of the funding model to various activities using a combination of a RAV and margins approach.[14]

A pure RAV*WACC model does not work well for the ESO because it does not appropriately recognise or scale with all the risks within the activities we undertake, as we have outlined earlier. We believe it also carries perverse behavioural incentives, for example to favour capex-based solutions, which is exacerbated by the lack of a totex sharing factor.

[11] ESO response to RIIO-2 Framework Consultation https://www.nationalgrideso.com/document/136956/download
[12] Exploring how the ESO could be funded in RIIO-2 https://www.nationalgrideso.com/document/136896/download
[13] ESO RIIO-2 stakeholder engagement report https://www.nationalgrideso.com/document/145601/download; Responses to our thought-piece https://www.nationalgrideso.com/document/136966/download
[14] Reckon report, p. 58, 85, 93 https://www.ofgem.gov.uk/system/files/docs/2018/07/reckon_final_eso_report_20jun2018.pdf

Our activities can be divided into three main groups. These incur different types of costs and expose us to different types and levels of risk. In each case, we are accepting responsibilities in relation to the operation and management of the electricity system. These responsibilities entail key risks in relation to performance, delivery and operations on a day-to-day basis.

Operating the system

We dispatch generation to meet demand and balance the system in real time, working within operational requirements to ensure the lights stay on across GB in a safe and economically efficient manner. This is extremely complex operationally, and requires a combination of highly skilled people and sophisticated IT systems. This area of activity drives the majority of the ESO's IT investment (i.e. capex), with projects that are large relative to the size of our RAV. For example, the iEMS project in 2017/18 cost £43m[15], compared to our closing RAV at the end of RIIO-T1 of c.£230m.[16] It also requires us to invest significant opex in intangible assets in the form of people with specialist skills and expertise, to support real-time operation and the facilitating and running of balancing markets in the short-medium term.

This area of activity involves an asymmetric downside risk of failures that arise from system or operational errors, leading to huge reputational risk and potentially the financial risk of needing to redesign the system. We are exposed to the operational risk of not being able to meet minimum operational requirements, leading to potential regulatory and legal action from system users. There is also risk inherent in the need to attract sufficiently skilled and talented people.

In thinking about useful benchmarks when considering financeability, this function is similar to the activities of a securities exchange such as the London Stock Exchange. This is explored further in KPMG's independent report that accompanies this response.

Market and industry services

This area comprises a range of activities and services that are provided by the ESO for the wider system. It requires a certain amount of capex investment for IT systems, but is predominantly reliant on the skills and expertise of qualified, trained and experienced employees. The asset-light nature of these activities is more aligned with a professional services business, such as a firm that provides consulting and data analytical services, than with a network company business.

This area involves market facilitation and information provision, which opens the ESO up to the risk of regulatory enforcement action and potential third party claims in the event of any errors, as well as reputational risk. There are operational risks such as IT failures, data loss and cyber security breaches. In RIIO-2 we propose to step up and play more of a leadership role in transforming markets to be fit for a low-carbon future, which exacerbates these risks. These types of risk represent financial exposures that are potentially significant relative to the size of the ESO business. There is also the same risk as above of being unable to attract and retain qualified staff.

Future uncertainty exists around many of the activities the ESO undertakes in this area. Ofgem has highlighted code administration, EMR delivery body and information management as activities it may look to open up to competition in the future. There is also the potential for an additional role for the ESO in the facilitation of competition in transmission; changes to any of these activities would potentially have an impact on the associated risks for the business.

The very limited balance sheet assets in this part of the business have implications for the financeability of this activity area, e.g. limited ability to raise debt and challenges in how financeability should be assessed.

Industry revenue management

As required by governance set out in two industry codes and our licence, we finance payments to the Transmission Owners (TOs) and other industry participants in the form of TNUoS, BSUoS and Connections charges. These make up over £4bn of cash that we transact every year. This is an order of magnitude larger than the size of the ESO business: around 20 times larger than our controllable revenues.

SONI carries out a similar role in Northern Ireland – albeit on a smaller scale – so it is useful to look at its funding arrangements. Looking wider than the energy sector at other market benchmarks, this role is similar

[15] The integrated Energy Management System (iEMS) project involved replacing all of the software and hardware associated with the communications system to transmit real time data and control instructions between our control room and equipment on the transmission network. The updated system went live in November 2017 with a programme cost of £43m.

[16] This represents our latest forecast

to the function undertaken by a simple financial institution such as credit card issuers, invoice factoring organisations or remittance services. There are a number of metrics used to monitor financial institutions for regulatory purposes that may be useful to apply to the ESO when considering financeability; these are explored further in KPMG's independent report that accompanies this response.

It is important to take these varying risks into account when considering the ESO's funding model, to ensure it provides remuneration for risks as well as costs incurred.

How these are addressed by a layered model

A layered model is better able to reflect the very different risks we face. For example, this was recognised in the CMA's recent ruling on SONI's price control appeal. SONI carries out a similar industry revenue management role to the ESO; the CMA ruled that these roles are not risk-free, and it is reasonable to apply a margin to the transactions given the risks relate to the size of the revenues transacted. The CMA found that the Utility Regulator's (UR) RAV*WACC could not, on its own, reliably address these risks.[17] It is important to note that SONI manages external costs approximately five times the size of its price control revenues, compared to the figures for the ESO set out above. The CMA ruling is set out in further detail in Appendix A.

The funding model should recognise that the ESO does not rely only on its assets, but undertakes activities with varying attributes and risks, which are best remunerated through a RAV*WACC plus margins approach.

We believe an appropriate model would consist of the following elements to reflect our different activities and risks:

1. RAV*WACC – a return for capital employed.
2. Margin on operational costs – a return to reflect our risks and provide greater capacity for the ESO to manage risk, innovate and invest so that we can deliver our ambitious, stakeholder-led business plan.
3. Margin on external costs – a return to reflect and scale with the risk we are exposed to in our industry revenue management role. Even with the cost of a WCF passed through this is not a zero-risk activity.
4. An incentive scheme with clearly defined outputs and an upside potential to drive positive behaviour and place a strong incentive on the ESO to deliver additional benefits for consumers.

The scale of the risks and investor requirements in the activity areas of 'operating the system' and 'market and industry services' suggests that a RAV*WACC return alone is not appropriate to deliver financeability of these activities without additional support from margins. The appropriate margin will depend on the activities being remunerated and the risks associated with them.

In delivering each of these activity areas the ESO is exposed to working capital requirements, even where costs are fully passed through into revenues with no ex-post review. This means that the ESO still needs to finance the activity during the intervening period between when the costs are incurred and the point at which costs are recovered through charges. Even where costs are pre-funded, there remains a risk that actual costs will exceed funding available, requiring a draw on capital resources until the point that these are 'trued-up'.

We would like to work with Ofgem to develop a methodology for calculating the appropriate levels of margins on operational and external costs.

Setting an appropriate WACC will require recognition of the differences of the ESO. A useful starting point would be to consider the WACC applied for SONI and EirGrid, as similar businesses.

b) Model 1 with margins (a layered model) drives the right behaviours

Designed with the appropriate levels of WACC and margins, this funding model can drive us to innovate and invest on behalf of consumers; the inclusion of margins alongside a RAV*WACC approach will provide remuneration for the ESO to manage the risks we hold across our wide range of activities. This will ensure that we will have sufficient headroom to take investment decisions to deliver our ambition, and will not be constrained by fear of attracting any downside that we are unable to manage. It also provides transparency to stakeholders on what the ESO is being remunerated for, and how this is calculated.

This is augmented by a strong incentive scheme to encourage the delivery of additional benefits for consumers, which we discuss in response to ESOQ5.

[17] CMA's Final Determination on SONI appeal, paras 12.131-12.138
https://assets.publishing.service.gov.uk/media/5a09a73ce5274a0ee5a1f189/soni-niaur-final-determination.pdf

In addition, the combination of both a RAV*WACC approach and a margin on operational costs will avoid any bias for one type of investment over another, which is a risk of a purely RAV-based model. The ESO invests in both capex and opex to deliver our activities and deliver benefits for the industry and for consumers.

We have worked extensively with stakeholders over the last year or so to understand and develop a funding model that we believe is most appropriate for the ESO. This has included a workshop with 43 attendees and multiple webinars with up to 50 attendees at each. We have also engaged bilaterally with 84 organisations in the development of our RIIO-2 business plan, and have discussed potential funding models with many of them. These stakeholders have included generators, suppliers, Citizens Advice, academics, network companies, service providers, trade associations, government and those with a wider interest. We have collaboratively discussed the varied needs of these stakeholders and considered how different funding model approaches can drive us to deliver for them.

The majority of stakeholders have supported a form of layered model as the most appropriate to apply to the ESO and enable us to be the business they want to see, combined with strong incentives to drive further positive outcomes. We have consistently heard that stakeholders want us to be agile, ambitious, innovative and strongly incentivised. We have also heard an overwhelming consensus that a pure RAV*WACC model is not appropriate for the ESO. Below are some quotes from stakeholders in our engagement and in response to Ofgem's consultations to illustrate this:

"Given the nature of the ESO, it is reasonable to assume that the layered model could meet the characteristics of a successful regulatory framework. This approach provides the ability to tailor funding appropriately". (Consumer body)

"The benefit of a layered approach is that it can ensure the ESO has sufficient funding to function to deliver expected levels of services". (Supplier)

*'A pass-through with margins-based approach to remuneration based on the ESO's activities make sense given the asset-light nature of the system operator that makes a conventional RAV*WACC approach unsuitable'.* (Generator)

Implications for ESO behaviour of maintaining the status quo

Our assessment of continuing with the status quo – i.e. the assumptions implied within the network companies' Sector Specific Methodology Decision – may leave the ESO without sufficient liquidity and with risks that are not remunerated, as discussed above. The effect of this systemic under-remuneration of risk is well documented in academic literature. It will increase reluctance to invest, create risk-averse behaviour and could potentially lead to the unintended consequence of the ESO being incentivised to work against the broader aim of delivering greater consumer benefits. For example, stakeholders have expressed concern that we would only contract with large, established IT providers which may not be the most efficient or cost-effective way to drive the transition to the decentralised, digitalised and low-carbon energy system of the future. Management time would be focused on trying to minimise risk rather than to push forward with innovative approaches that could drive significant consumer benefits.

Any short-term consumer savings from lower funding of the ESO will be far outweighed by the risk of seeing consumer benefits deferred or not realised, working against our shared objective to provide for an ambitious and adaptable ESO.

c) Model 1 with margins (a layered model) is sustainable and supports future flexibility

Our proposed model is adaptable over the long-term: it allows for flexibility around future changes in our roles, activities and costs. Separate, transparent margins on operational and external costs allow for scaling with changes to services and the size of the revenues we transact, avoiding the need to revisit the funding model and reassess the WACC each time this occurs. For example:

- Ofgem indicated in its Sector Specific Methodology Decision that it is considering an additional role for us in facilitating competition in transmission.[18] Depending on what this role is, it may expose the ESO to additional risks and therefore require additional or different remuneration.
- The ESO's activities, costs and risk exposure could change as a result of charging changes, including the outcomes from the Charging Task Force. For example, any outcome to fix BSUoS tariffs in advance would expose the ESO to ex ante forecast risks similar to those currently experienced in relation to TNUoS charges.

[18] Ofgem's RIIO-2 Sector Specific Methodology Decision, ESO Annex, para 2.20

- Ofgem confirmed in its latest Decision that it is seeking to allow different ESO activities to be considered discretely in order to keep the option open for competition in the future if it becomes clear that this would lead to consumer benefits.[19]

The layered model provides flexibility by allowing each activity (or group of activities) to be appropriately remunerated, reflecting their characteristics and creating transparency in what is being paid to the ESO in margins to deliver our services, rather than a single WACC number applied across the entire business. This allows for changes like the examples above to be incorporated into the framework much more easily in the future. Adopting the base Model 1 option without margins risks being less sustainable.

Similarly, delivering a greater volume of services using the same asset base risks the ESO being under-remunerated due to the absence of incremental return for taking on an incremental risk, e.g. increasing the volume of connections or the number of ancillary service counterparties. This would incentivise us to minimise risk exposure and capital employed so that we maximise returns, potentially leading to decisions that work against the aim of delivering greater consumer benefits. The effect on behaviours would be to avoid risk, delay decisions (until funding is adjusted to the change), skew solutions towards those that maximise our return (e.g. aligning to assumed capitalisation rate) and deliver at or above the internal rate of return.

d) Model 1 with margins (a layered model) ensures financeability

We have reviewed each of the base consultation models using a combination of debt and equity metrics and assessed these against indicative thresholds, with reference to credit rating agency published methodologies, regulatory precedence and relevant market benchmarks. Please refer to Appendix C for details of the metrics reviewed, thresholds applied and key assumptions used.

In analysis of our proposed layered model, we have included margins on both operational and external costs, reflecting our view that this is the most appropriate model to allow revenues to flex with changing activities. We have included margin level assumptions, for illustrative purposes, to understand the impact of such inclusions on credit and debt metrics. These do not represent our view of the required margin levels to ensure financeability, and we would like to explore this further with Ofgem.

The inclusion of margins puts equity metrics more in line with illustrative benchmarks, and providing headroom within debt metrics enables the management of a number of modelled downside scenarios.

The ESO has been rated by Moody's under the Regulated Electricity and Gas Utilities Methodology, which assesses the company through a mix of qualitative and quantitative measures. Special consideration has been given by Moody's to our industry revenue management role and the significant financial volatility this drives in the ESO, and a significant 'below the line' adjustment has been made to the Moody's Grid Rating (A1) – of at least four notches – to reflect this. Any changes to the ESO's funding model that would have an impact on cash flow volatility, liquidity risk or the implied level of National Grid support will have a material impact on our credit rating, and therefore financeability.

We have set out elsewhere in this response the risks we hold in delivering our industry revenue management role. Although these risks cannot be removed without significant regulatory intervention (e.g. paying TOs only when cash has been receipted by the ESO), the introduction of a margin on external costs allows for direct remuneration of the risks associated with this role. This inclusion is expected to be credit positive.

The ESO is reliant upon a number of different types of capital to support our effective operation, including capital invested in fixed assets, working capital for liquidity, and the potential draw-down of additional capital to support investment requirements and implicit parental support. Equity investors will consider these different demands against their perceived risk and return expectation. We believe EBIT margin is an appropriate measure of the total profitability required by the equity investor, and have used this as one of our key metrics to review and ensure comparability between ourselves and other potentially suitable industries and organisations against which ESO returns can be tested.

Our analysis shows that inclusion of a margin on external costs (0.5% on TNUoS and Connections, and 0.25% on BSUoS used for directional testing) and a small margin on opex improves EBIT margins to be more in line with those seen in other asset-light businesses, suggesting that margins would be required to support equity financeability.

[19] Ibid., para 2.18

This type of model is used for both SONI and EirGrid, whose regulatory models align with EBIT returns on controllable revenues of c.12-14%.[20] Returns at this level are also highlighted in many credit rating methodologies for asset-light businesses, including around 11% for professional services businesses based on data derived from Thomson Reuters Eikon on a broad group of firms.[21]

We have also considered EBIT margin levels against total amounts transacted given the relative size of these cash flows compared to the size of the ESO. This returns an EBIT margin in the region of 0.7% for the ESO, which is below the SONI and EirGrid equivalent EBIT margins on total revenue of 1.5-1.7%.[22]

Financeability challenges still remain within a model that includes margins alongside a RAV*WACC methodology; to ensure that appropriate capital is available to meet liquidity requirements and that overall returns are appropriately calibrated for the high level of operational gearing and risk asymmetry, these would need to be considered further.

Overall, we believe this model is best able to provide the flexibility to ensure financeability, while protecting the interests of consumers over time.

1.4 Assessment of Model 1 – RAV*WACC (no margins)

a) Model 1 – RAV*WACC (no margins) – is not appropriate for the business

A pure RAV*WACC model does not recognise or scale for the range of the ESO's activities and the associated risks: it does not remunerate the majority of our value, which lies in the people, processes and contracts we operate; nor does it reflect the competitive market returns for such activities.

In particular, this model does not recognise or remunerate the significant risks the ESO is exposed to in our industry revenue management role. Precedent for this can be found in the CMA's decision to approve a layered model for SONI that included a margin on its external costs, noting that the risk faced by SONI in this role was not zero. EirGrid also has a layered model with a margin on its equivalent to TNUoS; the regulator recognised that it was appropriate to link remuneration to risk, so that the operating margin on the business scales to match the risks held.

b) Model 1 – RAV*WACC (no margins) – does not drive the right behaviours

The lack of remuneration for the majority of the ESO's activities would lead to cautious behaviour from the ESO and limit innovation, due to the inability to earn a return on operational costs and therefore manage the potential downside of errors or riskier investments. In addition, there is a potential bias within the RAV*WACC model to favour capital investment where there is a natural capitalisation rate, as we would earn no return on operational cost solutions. This specifically disincentives the organisation from undertaking riskier non-capital investment in the interest of consumers.

Since Ofgem began considering the design of the RIIO-2 framework in 2017, moving away from the historic purely RAV-based model has been supported by stakeholders for the ESO: for example, in the published responses to Ofgem's RIIO-2 Framework and Sector Specific Methodology consultations, out of 26 and 22 stakeholders respectively who specifically commented on the ESO's framework, only one advocated the continuation of the RAV-based model. This demonstrates the wide stakeholder support for moving to a different approach for funding the ESO.

c) Model 1 – RAV*WACC (no margins) – is not sustainable and does not support future flexibility

This model is potentially inflexible to future changes, requiring a re-opening of the WACC each time an activity is added or competed if there is no associated substantive RAV. This seems undesirable given the context of a rapidly changing energy system and the potential for the ESO to take on or compete activities to provide further benefits.

d) Model 1 – RAV*WACC (no margins) – does not ensure financeability

Our analysis shows that the traditional model for calculating allowed returns for network companies, based on applying only a WACC to the value of the company's RAV, will not provide an adequate level of return to

[20] UR Decision on 2015-2020 price control for SONI https://www.uregni.gov.uk/publications/decisions-2015-2020-price-control-soni; and CER15190 TAO Revenue Model https://www.cruiie/wp-content/uploads/2015/07/CER15296b-TSO-Decision-Model-excel.xlsm

[21] See the accompanying KPMG independent report

[22] UR Decision on 2015-2020 price control for SONI; and CER15190 TAO Revenue Model

enable the ESO to be financeable over the RIIO-2 period and beyond. This is because the ESO has a small RAV relative to our scale of operations, risks and total assets used.

The RAV is small in relation to the comparatively high level of costs we manage, as illustrated in the below Figure 3, and the proportion of revenues obtained via the RAV is also small in comparison to the overall revenues transacted by the ESO, which are c.20 times our RAV[23]. These features are in contrast to the larger, asset-heavy network companies, and make the ESO more similar in nature to other service-based organisations that tend not to be regulated solely using a RAV*WACC framework.

Figure 3[24]

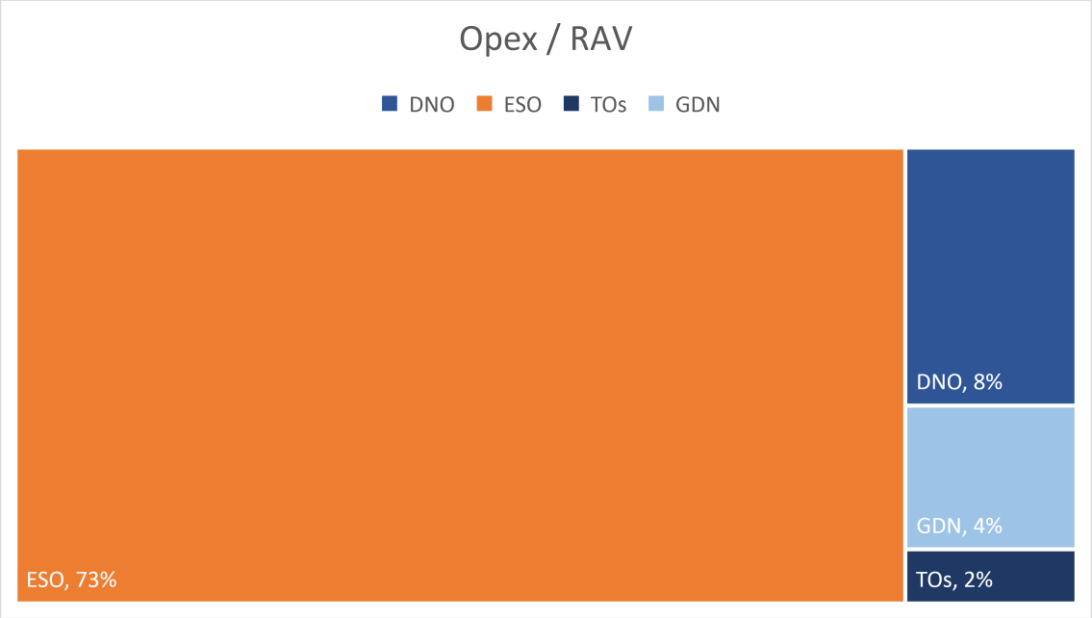


Figure 3 shows that our opex is 73% of our RAV. Our very high operational leverage means that the risk held by the ESO is not correlated to the size of our RAV, and additional mechanisms are needed to enable the ESO to generate financial headroom to accommodate downside risk and substantial cash flow and profit volatility.

This is demonstrated when we look at some of the metrics under this scenario, set out in more detail in Appendix C. Under the nominal base scenario and notional capital structure of 60% gearing to RAV, the Adjusted Interest Cover Ratio (AICR) is below the 1.4x target threshold for Baa for much of RIIO-2, and is unlikely to imply sufficient financial headroom to manage the risks to which the ESO is exposed.

Furthermore, when looking at EBIT margin levels based on both controllable and total revenues, projected margins are tight and fall short of benchmarks. This implies that under this model the ESO is unable to meet profitability levels that would be expected by investors for a business of this type, given the business characteristics and risk exposure set out above.

Given the significant capital investment anticipated, it will not be possible to finance this investment under the notional company structure without large injections of equity funding. This additional call on equity may prove difficult to appropriately remunerate under a RAV*WACC-only mechanism. Certain credit metrics could be improved by departing from the 60% gearing assumed under the baseline notional structure; however, this would not address and could exacerbate equity financeability concerns.

It is therefore our conclusion that a RAV*WACC-only model without additional margins will not ensure a financeable ESO.

[23] This figure represents opening RIIO-2 RAV c.£230m, with expected Use of System and Connections charges in same period of c.£4bn

[24] Figures quoted are calculated using average figures for RIIOT1 and ED1 to 2017/18 included from sources https://www.ofgem.gov.uk/publications-and-updates/riio-et1-financial-model-following-annual-iteration-process-2018 and https://www.ofgem.gov.uk/publications-and-updates/riio-ed1-financial-model-following-annual-iteration-process-2018

Assessment of Model 2 – 100% fast money

a) Model 2 – 100% fast money – is not appropriate for the business

The 100% fast money model without margins represents a model that will not ensure financeability for the ESO over the long term. Equity holders would be required to provide contingent capital in the event of any shock or downside scenario without the expectation of a return from the business. This is discussed further in the section on financeability.

In addition, there is no precedent in GB for this model, making its application more uncertain.

b) Model 2 – 100% fast money – does not drive the right behaviours

The absence of a return prevents the ESO from absorbing shocks or downside scenarios. This model would drive extremely cautious behaviour as any error or cost disallowance would immediately have an impact on the equity holder. The equity holder would need to rely on evaluative incentives to compensate for all risks, which would be subject to Ofgem's discretion. It is reasonable to assume a correlation between downside scenarios and lower incentive outcomes, which would increase risk aversion, leading to an overall reduction in ambition in delivering consumer benefits. In particular, the model would not be compatible with the Black Start disallowance mechanism, which is a downside-only incentive that allows for up to 10% of Black Start costs to be disallowed ex post.

In contrast, this model has the benefit of avoiding any bias between spending capex or opex that may appear in the RAV*WACC model.

c) Model 2 – 100% fast money – is not sustainable and does not support future flexibility

The fast money model sees 100% of both capex and opex being recovered in the year. This has two potential impacts on customers and consumers: increased charges in the short-term for customers due to bringing forward revenues, and increased volatility of customer charges. These increases would pass through to consumers.

This model has a negative effect on intergenerational fairness, where current consumers pay upfront for assets that are enjoyed by future consumers.

d) Model 2 – 100% fast money – does not ensure financeability

We do not believe that a 100% fast money approach with no margins applied will provide a financeable model over the long term. Although this model creates short-term liquidity and therefore facilitates investment in required IT systems over RIIO-2, the lack of generation of a RAV effectively means that no return is provided to the equity holder for the core activities the business accepts responsibility to undertake. Nevertheless, the risks associated with undertaking these activities largely remain, e.g. the risk of ex post cost disallowance. These therefore remain unremunerated. This model implies that the ESO's business operations could be undertaken on a non-profit basis.

Bringing cash forwards as increased fast money means there may no longer be a natural hedge between the level of revenue and the associated costs to the business of that capex (via depreciation charges). This, without a change of accounting policy, may give rise to excessive accounting profits during the transition. Furthermore, one of the side products of this may be that taxable profits are brought forward, driving inefficiency and a greater burden on consumers in the short-term.

Given that under this model all planned capex investment is returned in the year in which it is expected to be spent, ESO revenues will become very sensitive to any variation in this annual capex profile, risking volatility in customer bills (and therefore for consumers). The ESO's capital assets tend to be IT systems with relatively short asset lives (c.5-10 years), with single investments accounting for significant portions of the ESO fixed asset base, thus exacerbating this issue.

In assessing companies' credit metrics, credit rating agencies amend their calculations to strip out any excess of fast money, which means that much of the potential short-term benefit of this model would be lost from a rating perspective. Without additional margins, this model does not facilitate the achievement of an investment grade credit rating as it does not provide any ability to deal with downside shocks.

This would not allow for a financeable organisation and therefore cannot be considered a viable option for the ESO.

Model 2 Variant – Fast money model with margins

Combining the fast money model with margins does create headroom for risks to be taken, depending on the levels of the margins. Such a model has the potential to be financeable with the addition of margins on internal and external costs. However, the detrimental impacts on consumers outlined above would remain in any variation of a fully fast money model; therefore we do not believe it should be pursued.

Under both variants of the model, the ESO would effectively move to being a 100% equity business. It would be important to fully consider how to effectively assess the financeability of such an organisation, so that consumers are not left exposed by a higher risk, less financially resilient ESO in the future.

ESOQ2: Is an additional return needed to reflect the potential risk of cost disallowance or other regulatory penalty? How would this additional return be best delivered – via a higher WACC or a margin on internal or external costs?

2.1 We are not proposing an 'additional return', but rather that returns should be appropriately calibrated. This would incorporate margins on operational and external costs alongside a RAV*WACC.

Our view on this question is covered in our response to ESOQ1 above.

The use of cost disallowance and no sharing factor increases the asymmetry of risk faced by the ESO in comparison to the other RIIO companies. It is well known that asymmetric risks are not reflected in the WACC when using CAPM[25] and that adjustments are required to account for this, e.g. either explicitly in cash flows or through adjustment to beta. We are therefore not proposing an 'additional return'; rather we believe that returns should be appropriately calibrated, recognising the asymmetry of risks the ESO faces from our activities and the proposed funding model. This would incorporate margins on operational and external costs alongside a RAV*WACC that creates flexibility to make targeted adjustments to reflect future changes. This would enable the recognition and remuneration of the range of risks the ESO holds across all our activities.

The impact of not addressing asymmetry has been extensively evaluated[26] and can lead to deferral of investment or unintended consequences where it incentivises actions that go against the intended aims. The specific asymmetric risk exposure from our industry revenue management role is further discussed in response to ESOQ3.

In addition, the scale of any potential cost disallowance risk for the ESO is significantly higher than for the other RIIO companies. The difference in operational gearing this requires has seen appropriate adjustments made to beta, e.g. for SONI, to reflect the different impact this risk has when compared to the asset-heavy network companies.

ESOQ3: Would a working capital facility adequately cover the full range of risks the ESO is exposed to in fulfilling its revenue collection activities (in relation to collecting TNUoS and BSUoS charges)?

3.1 A working capital facility would not adequately cover the profit volatility, credit and general service business risks the ESO is exposed to in our industry revenue management role. We believe it is appropriate for the ESO to receive a return for this activity in the form of a margin on the external costs we manage. This is supported by recent regulatory precedent and benchmarking of financial institutions that carry out a similar role.

As explained in our response to ESOQ1, part of our role at the heart of the UK energy system is to carry out the industry revenue management role, collecting and distributing revenues across market participants for network charges including TNUoS, BSUoS and Connections Charges. This role is unique to the ESO among the RIIO-regulated companies and results in us transacting over £4bn of cash annually. This is an order of magnitude larger than the size of the ESO business: around 20 times larger than our controllable revenues.

- TNUoS (c.£2.7bn transacted p.a.) – The ESO must settle amounts to the TOs regardless of whether the relevant sums have been received by the ESO from counterparties. Consequently, the ESO must finance any potential mismatches between these items. The difference between these flows is not directly under the ESO's control, with counterparties forecasting their own annual charges. These are subsequently

[25] Capital Asset Pricing Model
[26] For example, CMA's Final Determination on SONI appeal, paras 12.97-12.113; and Synergies Economic Consulting report into Asymmetric Risk https://www.erawa.com.au/cproot/7498/2/20090422%20Goldfields%20Gas%20Pipeline%20Access%20Arrangement%202009%20Asymmetric%20Risk%20-%20Synergies%20Economic%20Consulting.pdf

billed and monitored by the ESO to ensure these forecasts do not deviate from actual demand usage by more than 20%.

- BSUoS (c.£1.3bn transacted p.a.) – The ESO recovers the cost of balancing the system from users under BSUoS charges. This is billed daily within 21 days of the settlement day, and reconciled 14 months after the settlement day to update costs being recovered on an ex post basis. The ESO must finance any BSUoS shortfall until the reconciliation point, or permanently if it occurs after this point.
- Connections Charges (c.£0.2bn transacted p.a.) – The ESO is responsible for co-ordinating the costs of facilitating and building new connections to the transmission network. As is the case for TNUoS, the ESO has an obligation to settle amounts to the relevant TO, which are billed to the third-party customer, regardless of whether we have received these revenues from the customer.
- The ESO also plays an industry role in the management of funds from users of the system to those parties incurring costs. These include, for example, Assistance for Areas of High Electricity Distribution Costs (AAHEDC), recovery of Ofgem licence fees and Inter-TSO compensation.

The revenue management role introduces significant cash flow and profit volatility risk at a scale that is completely different to the rest of the risks faced by the ESO, in addition to credit and wider business risks. This affects our ability to secure an investment grade credit rating as required by our licence; our ability to provide assurances over the financeability of the notional company; and our proposition for attracting investors and providing adequate returns to them.

As we set out at the start of our response, one of the overriding objectives of regulation is to simulate the outcomes that would be observed if the services provided were to be procured under competitive market conditions. It is therefore important to consider the risks we hold in delivering this role and how effective markets would deal with them. We believe that responsibility for the risks associated with this role would not be accepted under commercial terms that purely allow for the recovery of costs associated with a WCF.

The industry revenue management role exposes the ESO to significant liquidity risk that cannot be fully addressed by a working capital facility

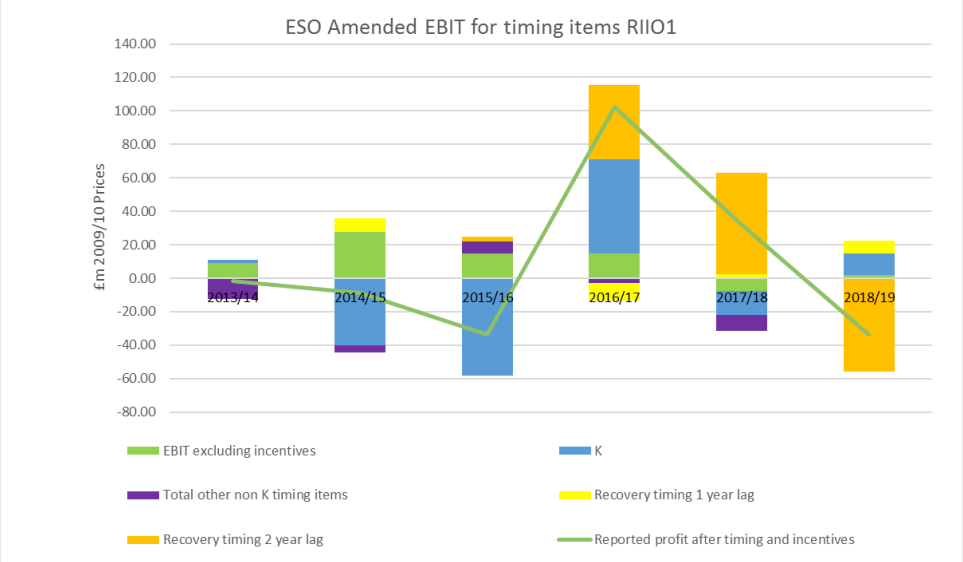
While a working capital facility (WCF) would allow the ESO to manage a large proportion of this liquidity risk, a WCF would not mitigate all potential cash exposures due to the uncertainty and volatility around the size of potential cash flows. Many of the risks the ESO holds are not directly under our control and are not fully predictable in advance. Furthermore, the potential range of this cash flow impact is large. The ESO's risk modelling indicates that, while we can expect on average a negative cash flow impact of c.£140m per year, this may be substantially larger, and many of the risks extend across multiple years. Should the more extreme values occur, there is a risk that the ESO will not have access to capital to cover any gap between a WCF and required financing. The ability to access such funding at short notice is likely to carry a cost premium, and to negatively affect the ESO's credit rating as well as investors' general perception of risk.

We set out in Appendix B a more detailed analysis of the timing risks inherent within the industry management role.

In addition to the pure liquidity risk resulting from the revenue management role, much of this risk also manifests as profit volatility due to impact on ESO revenues.

If we isolate similar risks for the RIIO-T1 period to date while the ESO was an integral part of National Grid Electricity Transmission plc (NGET), we can see that significant EBIT volatility has been experienced, which provides further evidence of the profit exposure we experience due to this role.

Figure 4: ESO historic EBIT volatility



It should also be noted that the historic levels of volatility experienced and systemic risk of future volatility is a key consideration in Moody's assessment of us, and has directly contributed to the downward notching of our rating as mentioned earlier in our response. The holding of an appropriately-sized WCF also forms a key part of the assessment and is fundamental in providing assurance over our liquidity position.

There are a number of additional risks inherent in the revenue management role that cannot be addressed by a working capital facility

Profit volatility

The same issues over cash flow predictability exist over the potential size and length of holding any profit exposure. This is because the majority of timing items are recorded through ESO accounting revenues and therefore impact the company's accounting profits. This makes it difficult to provide any certainty to equity holders over the business's ability to distribute returns to them through dividends. This is exacerbated by the relative size of the profit risk compared to the ESO's level of RAV return (being an order of magnitude larger).

Credit risk

The ESO is exposed to the risk that individual users do not pay charges on time or in full. Over the last year, we have seen an increase in company failures, with 11 electricity suppliers becoming insolvent during that time. Although security is held by the ESO, this does not fully cover the ESO's exposure. While we appreciate that there will be a timing difference between default and eventual recovery of any 'bad debt,' which will need to be managed, we do not believe that it is appropriate for the ESO to hold the full default risk, nor do we believe that it is industry's intent for the ESO to do so.

Ofgem has previously acknowledged this risk is not entirely avoidable and has provided a route by which such debt could be socialised across all parties. We believe this route should be formally adopted and that drafting should be included in the licence to give certainty to all parties, including working capital providers, on how the debt should be treated. It is critical to set out more formally the process and timing by which the ESO is able to recover these exposures.

General service business risk

Like any other business performing financial services, the ESO is open to the risk of human error, fraud, IT system failures and process risks etc. This risk of process error can have a negative reputational impact on the business, particularly in light of the central role we play in the wider energy system. The occurrence of any process failures could have far-reaching impacts and expose the ESO to significant costs to correct.

Our proposed model would ensure that the ESO remains financeable in the face of these risks and aligns with regulatory precedent

Similar models can be found in SONI and EirGrid where margins are applied on external costs. Each organisation sees a slightly different framework in relation to the use of a WCF: SONI receives a margin

(0.5%) and manages the costs of a WCF within this, and EirGrid receives a combination of margins based on the different cash flows transacted and allowances for a WCF.

Taking SONI's role as collection agent for industry revenue as an example, the CMA reached a number of conclusions which are equally, if not more, relevant to the ESO due to the scale of industry revenues being managed by the ESO compared to our operating costs. The UR had originally awarded SONI an allowance of its WCF fee for a £12 million facility with a cross-guarantee, and LIBOR[27]+2% on any tariff related year-end working capital balances. The CMA decided that a risk premium would be appropriate in place of the facility fee allowance set by the UR, and that this should be in the form of a margin on revenues, *"as the level of risk is related to the size of the revenues handled"*.[28]

Please see Appendix A for more detail on the SONI precedent.

Looking at broader benchmarks, the revenue management role is very similar to activities performed by financial institutions. The financing activity is similar to an invoice factoring arrangement or credit card organisation under which a company acts as an intermediary, releasing cash to one party while taking on the responsibility for collecting cash from another party. The advancement of funds can be seen as creating a loan asset that must be funded through a combination of debt and equity. This can be compared to the charging of assessment and interchange fees on credit card services, which are in the region of 0.43%.[29]

We would like to work with Ofgem to develop a methodology and appropriate benchmarks for calculating the appropriate levels of margins on operational and external costs.

ESOQ4: Would the ESO require additional funding or regulatory mechanisms to be able to procure a working capital facility? Please explain your answer.

4.1 The use of a WCF is currently an essential part of supporting our liquidity management strategy as well as obtaining our target credit rating. However, as we set out in ESOQ3, we do not think a WCF on its own would adequately cover the risks to which the ESO is exposed in relation to our industry revenue management role. We believe it is vital that the regulatory framework provides the appropriate remuneration for the revenue management activity, enabling the ESO to manage these exposures.

The ability of the ESO to secure a WCF has a direct link to the business's financeability and our ability to hold a strong investment grade credit rating. It is anticipated that any WCF provider will rely heavily on the entity's credit rating.

The ESO currently holds a Baa1 credit rating from Moody's. This has been obtained based on assumed implicit credit support from NG Group. The notional ESO will need a stronger credit profile than exists currently, in order to have a standalone strong investment grade credit rating, and we believe this should be an objective of future regulation. Until such point that it is financeable on a standalone basis, any parental support should be remunerated.

It is also relevant at this point to note the CMA precedent in relation to SONI. The CMA observed that the use of a facility fee effectively regulated SONI's financial structure. The CMA found that this was not normal regulatory practice, and that it excluded any knock-on effect of managing incremental risks on SONI's cost of capital.

The CMA recognised that there were consequential effects for SONI associated with managing revenue collection activities, including effects on the aggregate risks and financing costs of the business, observing that it expected that:

> *The risk taken in managing cash flows of the order of £100 million per annum would be reflected in SONI's credit risk, and therefore in its cost of capital*".[30] *[i]n practice, the size of these cash flows is….so large relative to SONI's business and [equity] buffer that we do not consider it reasonable to*

[27] The London Inter-bank Offered Rate (LIBOR**)** is a benchmark interest rate at which major global banks lend to one another in the international interbank market for short-term loans. It serves as a globally accepted key benchmark interest rate that indicates borrowing costs between banks. The rate is calculated and published each day by the Intercontinental Exchange.
[28] CMA's Final Determination on SONI appeal, para 12.138
[29] Included in the accompanying KPMG report
[30] CMA's Final Determination on SONI appeal, para 12.136

assume that there is no incremental cost of managing this risk"[31]*…" the size of these effects will grow with the size of the operations that SONI is managing.*

If the notional company is financeable and the actual company holds a strong investment grade credit rating, we would suggest that no other regulatory mechanisms should be needed in order to procure a WCF. This expectation may change based on the size of facility required in relation the size of the company and risk profile. Therefore, any changes to the risk profile of the company may have an impact on the ability to secure a WCF. Such changes are also likely to have an impact on the notional company's financeability and/or the actual company's credit rating.

Examples of items which would likely challenge the ability of the ESO to secure or maintain a WCF are:

- Negative changes to our credit rating
- Changes in ownership
- A requirement to secure additional facilities if existing facilities are deemed inadequate (especially if this is based on unexpected need)
- Changes in funding arrangements that increase the risk that the company will not be able to pay facility costs
- A requirement for a facility at a size disproportionate to the size of the company
- An expectation that the facility would be used to fund equity losses

A WCF is a form of debt funding, usually targeted at short-term liquidity requirements with a high confidence of recovery in relatively short timeframes. It would not be expected that a WCF would be sized to take into consideration all potential outcomes, including all low probability but high impact events. This residual risk would default to the equity holder and should be remunerated.

ESOQ5: Do the benefits of retaining the ability to apply a downside incentives penalty outweigh the potential costs in terms of the impact of ESO financeability?

5.1 We believe there is benefit in retaining the ability to apply a downside incentive penalty to create a stronger incentive on the ESO, but this will only be possible with the right funding model in place.

Our top priority is delivering for consumers

We agree with Ofgem and stakeholders that having the right incentive framework in place will be key to ensuring that we focus on maximising consumer benefit. Over the past year, we have heard wide stakeholder support for a strong incentive scheme to supplement our funding model to encourage the ESO to deliver additional consumer benefits.

We want to ensure that the ESO is strongly incentivised. We believe this involves:

- Supporting financial resilience by appropriately limiting the downside exposure faced by the ESO under the incentives regime.
- Focusing incentives on the areas that provide most benefits for consumers, and tailoring the incentive arrangements to the specific characteristics of the activity or outcome in each of those areas.
- Providing a strong and clear link between levels of performance and associated outcome.

We would like to work with Ofgem and stakeholders to develop detailed incentive design across the suite of activities and outcomes to be delivered by the ESO. It is essential that our incentive scheme works with the funding model to ensure financial resilience.

We welcome Ofgem's recognition of the potential inability of the ESO to manage a large incentive downside, although we note that cost disallowance and the Black Start incentive in the framework already create downside potential, and therefore the framework as currently proposed cannot be described as upside-only.

We do believe there are compelling arguments (explored further below) for retaining a small downside penalty to provide additional incentive. This will only be viable if the funding model and incentive scheme work together as a package to ensure we are financeable. We believe a positively-skewed asymmetric scheme can

[31] Ibid., para 12.138

drive the right behaviours along with our proposed funding model, but this would be dependent on our proposed layered model and the levels of WACC and margins.

We suggest that the size of any incentive downside is agreed after the ESO's funding model has been confirmed, in order to assess and ensure overall financeability of the framework. This will ultimately depend on the ESO's funding model and rates of return.

A form of incentive that includes a downside will have a greater positive effect on behaviours and relationships than an upside-only incentive

There is a vast body of research in behavioural economics which demonstrates that the risk of a loss acts as a stronger incentive on behaviours than an equivalent gain. This suggests that an incentive framework with an appropriately targeted and limited downside will be more effective than an upside-only regime.

Pre-defining an appropriate downside in certain circumstances will also build greater reciprocity and trust between the ESO and Ofgem / stakeholders than simply relying on cost disallowance to penalise poor performance:

- A small downside incentive could help signal a mutual commitment that both parties have a stake in the outcome, supporting a positive relationship built on trust and clear expectations, and requiring less ex post regulatory intervention.
- The proposal to move to no downside may not provide the range of future options that Ofgem feels appropriate if delivery is considered poor, and unforeseeable cost disallowance might be the only available mechanism. There are multiple examples where the absence of a pre-defined downside incentive mechanism has left Ofgem with limited choices to address an issue, which post-event sees an incentive arrangement introduced. Both the Black Start and Energy Not Supplied (ENS) incentive mechanisms were introduced after an event occurred. Re-opening the incentives framework in that way may be less collaborative than the opportunity we have now to design a fit-for-purpose downside arrangement from the start.

Tailoring incentives to different activities will enable a small downside in appropriate circumstances

We propose tailoring the structure of an incentive to reflect different behaviours, outputs and outcomes required. Given our desire for a strong incentive regime to best serve consumers, we believe there is a case for including an appropriate level of financial downside in incentives that apply to certain (but not all) ESO activities, in particular where:

- Incentives are targeted close to core / business as usual (BAU) performance. In this case, there is a stronger argument for downside, as failure to achieve will be falling short of standards expected of an efficient and economic system operator.
- The ESO has a high degree of control over the outcome being sought.
- Under-performance impact on consumers would significantly outweigh the benefits of outperformance.

These criteria point to the potential inclusion of a small downside to drive good performance and continuous improvement in:

- Shorter-term core operational delivery activities and related operational and capital costs; and
- Medium-term outcomes and activities where the ESO has a high degree of control and influence (e.g. more efficient and innovative ways of working, delivery of a new solution for a system issue, delivery of the next stage of a longer-term initiative).

Where the ESO has limited influence over outcomes, there is a stronger argument for a much smaller or zero downside. For example, achievement of certain outcomes may not be fully within our own control, could relate to longer-term outcomes against an evolving and uncertain future industry landscape, or may be heavily reliant on the actions of other parties. Where incentives are seeking to drive major innovation through the adoption of emerging technologies or to drive longer-term industry-scale transformation, there is a stronger argument for a larger upside, and much smaller or zero downside. This would reflect the fact that such transformational change is complex to achieve, but that the upside benefit for consumers could be very large.

This idea of tailoring treatment to different areas of incentives is aligned with the proposal put forward by the Ofgem-commissioned independent review of the ESO regulation and incentives framework by UCL earlier this

year, which suggested dividing the ESO's incentives into time horizons and treating them differently.[32] It would also help to ensure that any downside is only applied where appropriate, given the need to support the financeability of the ESO.

To further support financeability, there should be a strong link between performance and outcomes

We believe there should be clearer success criteria to improve the predictability of incentive outcomes. This is another critical element to ensure that the incentive scheme and funding model work together to effectively incentivise the ESO and ensure financeability. Transparency and confidence about expected outcomes will encourage us to invest.

We should only receive incentive rewards, or face any downside, if we have met the ex ante agreed success or failure criteria. We believe there are a number of 'building blocks' around which incentives and clear performance measures or criteria can be designed. For example:

- Baseline delivery performance incentives could be based on clearly specified deliverables, targets and plans set out in the ESO business plan, with payments or penalties based on performance measured via metrics, benchmarks and previous outturns.
- System outcome and consumer benefit incentives could be structured around defined roles and activity layers, where these have pre-defined targets and measures. Other outcomes may be more suited to evaluation based on evidence presented to the Performance Panel and Ofgem.
- Broader strategic and energy transition incentives could be structured around the ESO's longer-term ambition and aims. Despite the longer-term nature of these, it should still be possible to define interim milestones on the energy transition journey and base incentives on the achievement of these.

We look forward to working with Ofgem and stakeholders to explore these matters further as the incentives framework is further defined and consulted on over the coming months.

[32] Independent review of the ESO's regulatory and incentives framework https://www.ofgem.gov.uk/publications-and-updates/independent-review-eso-regulatory-and-incentives-framework

Appendix A – Analysis of the Competition and Markets Authority (CMA) determination in relation to System Operator Northern Ireland (SONI)

The CMA's conclusions in its determination of SONI's appeal of its 2015-2020 transmission system operator (TSO) price control settlement ('determination') provide an obvious precedent for a suitable funding model for the ESO. Ofgem must have compelling reasons for departing from the CMA's findings – otherwise Ofgem should adopt the same conclusions in its approach to setting the regulatory framework for the ESO. Such reasons for departure are not obvious from the RIIO-2 consultation documents that have been published to date.

In its determination, the CMA considered the financial framework used by the Utility Regulator (UR) to set SONI's returns under its price control. In doing so, the CMA reached a number of conclusions that are directly relevant to the developing ESO framework.

The UR had applied the RAB[33]*WACC framework – effectively the same RAV*WACC approach that Ofgem has historically adopted in respect of the RIIO network price controls (and one of the consultation options for the ESO). SONI submitted in its appeal that this approach was wrong because it:

a) Failed to take into account the specific characteristics of the SONI business (that it was asset-light, had high operational gearing, and had a 'saw-tooth' RAB which fluctuated significantly over time);

b) Failed to fully reflect the risks faced by SONI acting as a collection agent for significant industry revenues – which had in the past led to significant cost volatility and consequent under-recovery approaching double digit millions, equivalent to the size of SONI's RAB;[34]

c) Failed to reflect the risks faced by SONI and the intangible assets associated with SONI's business (including a specialised and skilled labour force required to undertake the sophisticated TSO function); and

d) Failed to account for the consequences of higher operational gearing (i.e. that SONI has higher exposure than asset-heavy utilities to external market factors and volatile cash flows).

SONI argued that the UR had created an inappropriate balance of risk and reward in the price control:[35]

> *…the Price Control results in the Appellant bearing a number of significant risks, many of which are negatively asymmetric, with no financial headroom…While [SONI] accepts that it will need to bear some level of risk provided it is proportionate to the rewards on offer for outperformance, the level and nature of risk originating from the Final Determination is not appropriate for [SONI] to bear and returns are not commensurate with the level of risk attributed. Indeed, there are few examples where [SONI] can be said to be properly incentivised to achieve superior performance, as opposed to being penalised for performance which is judged, occasionally with hindsight, to fall short.*

SONI emphasised in its Notice of Appeal the critical role played by the TSO at the centre of the electricity value chain.[36] SONI's role as TSO was described by the CMA as *"ensur[ing] that power flows where and when needed. [SONI] brings power from those who generate energy, and supplies the distribution network owned and operated by NIE that brings power to homes, farms and businesses"*.[37] The CMA agreed that *"the services provided by SONI are vital to the people and economy of NI, making it imperative that the Price Control is…resolved at the earliest opportunity"*.[38]

The ESO is the provider of comparable services in GB.

A central element of SONI's case was that the UR's approach did not enable it to confront significant challenges over the price control period arising from various policy initiatives and the external environment. SONI argued that the UR's approach would ultimately constrain the TSO's ability to maximise the benefit of the work it could carry out in the consumer interest.[39] The ESO similarly faces significant challenges over the course of the RIIO-2 period.

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[33] Regulatory Asset Base, an alternative term for the RAV
[34] CMA's Final Determination on SONI appeal, para 7.74
[35] SONI Notice of Appeal, para 3.37 https://assets.publishing.service.gov.uk/media/5914232940f0b638b000001b/soni-notice-of-appeal-energy-licence-modification.pdf
[36] Ibid., para 14.3
[37] CMA's Final Determination on SONI appeal, para 2.29
[38] Ibid., para 8.15
[39] SONI Notice of Appeal, para 16.15 to 16.17

The CMA found that the UR was wrong in its approach to remunerating SONI for the risks that it faced across its price control. The CMA agreed with SONI that the UR's financial framework did not reflect SONI's characteristics, that it did not properly remunerate SONI in respect of the risks it faced, and that it would pose significant risks to SONI's financeability. The CMA therefore introduced 'layers' of additional remuneration to reflect additional risks that were not covered by the RAB*WACC approach. These are explored in further detail below.

SONI TSO is analogous to the ESO business

There are clear parallels between the SONI TSO and ESO businesses. Key similarities between SONI and the ESO for the purposes of establishing the financial framework are:

- The size of the RAB/RAV relative to risk exposure, meaning that certain risks are not correlated to the size of the RAB/RAV;
- The limited size and nature of the RAB/RAV, namely IT capex that fluctuates over time, and the high level of intangible assets required to operate the SO function;
- High operational gearing;
- Reliance on capital that is not fully reflected in the RAB/RAV to finance activities and to ensure appropriate headroom – including large working capital facilities and additional equity capital availability (or equity 'buffer'); and
- Exposure to risk arising from managing significant industry revenues many times larger than the business's internal operating costs. This exposure is more significant for the ESO than for SONI, with the scale of revenues managed being around 20 times the value of the ESO's RAV. For SONI the revenues managed are around five times the value of its RAB.

The regulatory framework for EirGrid plc, the Irish TSO, as adopted by the Commission for the Regulation of Utilities (CRU)[40] in Ireland, also shares many of these characteristics.[41] The CMA drew extensively on this framework in setting the required adjustments to SONI's price control framework.

There are some differences between the ESO and SONI, but these do not support departure from the regulatory precedent set by the CMA in SONI that a RAV-based financial framework did not, alone, sufficiently remunerate the system operator business.

Key findings in the determination

First, the CMA concluded that the UR's RAB*WACC framework failed to reflect SONI's specific characteristics and to remunerate all the risks that it faced:

- While the CMA did not agree that the UR was wrong in principle to use RAB*WACC as a component of the total return, it found that the UR's approach failed to remunerate certain additional risks to which SONI was exposed.
- SONI had argued that, while a high WACC was, at face value, attractive, this had to be seen in the context of the RAB to which it was applied.[42] The CMA agreed with SONI that an adjustment to the level of WACC set by the UR would be insufficient to address the additional risks faced by SONI: *"…the circumstances are complex for SONI and that in other regulatory contexts an adjustment to the WACC would be an appropriate mechanism and would be sufficient to adjust such risks, as part of an 'in-the-round' assessment. However, given the small size of SONI's RAB, and the fact that it fluctuates significantly over time, we do not consider that this is a sufficient or reliable approach in this case, and that it would pose significant risks to SONI's financeability"*.[43]
- The CMA found that adjustments were required to properly remunerate SONI in respect of the following key risks:
    - The cost of managing industry revenues;

[40] Formerly the Commission for Energy Regulation (CER)
[41] CMA's Final Determination on SONI appeal, Table 7.1
[42] Ibid., para 7.85
[43] Ibid., para 7.380. In any case, the CMA found that the increased WACC the UR had adopted in its price control decision appeared to be consistent with the adjustment required to cover the higher operational gearing associated with SONI's BAU activities.

- The cost of obtaining a Parent Company Guarantee (PCG) from EirGrid plc; and
- The asymmetric risk associated with the UR's approach to financing much of SONI's investments, where returns were capped by the UR.

In finding that the RAB*WACC approach did not remunerate SONI for key risks, the CMA commented:

> *What distinguishes SONI from other regulated firms to which the RAB*WACC price control model is applied, is that it is asset-light and that: (a) much of SONI's activity does not relate particularly well to, or scale well with, the level of its investment in fixed assets; and (b) SONI is bearing risks, such as the collection agent functions, which are unrelated to its (modest) asset base.*

This is also true in relation to the ESO – many of our risks are also not correlated to the size of our limited RAV; the capital employed to fulfil the ESO roles is not fully reflected in this RAV; and we are similarly exposed to significant risk through the management of external industry revenues.

The CMA applied the following three adjustments to SONI's financial framework:

Risk	CMA adjustment
Risks faced by SONI in its role as collection agent for industry revenue of over £100m in the price control period	The CMA awarded SONI an annual amount equal to a 0.5% margin applied to relevant revenues collected by SONI. This was adopted in place of the facility fee of £108,000 that the UR had included in the price control. The CMA did not disallow SONI's existing allowance of a 2% adjustment to LIBOR on year-end balances in respect of revenue collection.
PCG provided by EirGrid plc to SONI	The CMA assessed the incremental cost of the SONI PCG and awarded SONI an additional allowance equal to 1.75% on the prevailing value of the PCG, equivalent to £175,000 in nominal terms
Asymmetric risk exposure faced by SONI in respect of two mechanisms in its price control, D_t and PCNP, under which returns are capped to a return on actual expenditure, without any opportunity for outperformance	The CMA set a fixed ex ante allowance of 3% on projected values in the business plan, i.e. a fixed annual allowance of £220,000

Each adjustment represented an additional allowance for SONI – the CMA's objective was to ensure that, *"in combination, the existing returns and the new allowances will result in a balance of risk and reward which will ensure SONI's financeability"*.[44]

Taking SONI's role as collection agent for industry revenue as an example, the CMA reached several conclusions which are equally, if not more, relevant to the ESO due to the scale of industry revenues we manage compared to our operating costs.

The UR had originally awarded SONI an allowance of its working capital facility fee for a £12m facility with a cross-guarantee, and LIBOR+2% on any tariff related year-end working capital balances. The CMA decided that a risk premium would be appropriate in place of the facility fee allowance set by the UR, and that this should be in the form of a margin on revenues, *"as the level of risk is related to the size of the revenues handled"*.[45]

SONI explained that there were three cost elements in providing this service:[46]

a) Direct costs associated with handling collection agent shortfalls, including the cost of putting a facility in place, plus transaction costs to SONI, a commitment fee for the facility being in place, and interest costs that arose if the facility was drawn upon.

[44] Ibid., para 12.3
[45] Ibid., para 12.138
[46] Ibid., para 7.76

b) A requirement for an 'equity buffer' to manage these activities, as revolving capital facilities implicitly require some element of equity backing to make them available.

c) An impact from these facilities on SONI's overall financing position since they affect the overall gearing of the business.

The CMA agreed that the risks associated with managing industry revenues were not sufficiently remunerated by simply reimbursing the direct costs of managing these revenue flows, e.g. through the facility fee allowance:[47]

> *In the case of the collection agent functions, including that relating to managing volatile TSO and constraint costs, we do not consider that an approach which only reimburses any direct costs that SONI incurs or has incurred on an ex-post basis, remunerates SONI for the risk it faces. This activity of acting as a payment intermediary would not be undertaken by a commercial operator without additional reward for not only the direct and indirect financial cost of managing the flows but also the risks of delayed- or non-payment, however small these might be perceived to be.*
>
> *We also consider that, as the revenue collection activities have risks which have no relationship to the size of SONI's investment in tangible fixed assets, the UR could not have assumed that the RAB*WACC approach would reliably address these risks, not least given the variability of, and the potential lack of predictability in, the size of its modest RAB.*

The CMA recognised that there were consequential effects for SONI associated with managing collection activities, including effects on the aggregate risks and financing costs of the business.

The CMA observed that it expected that *"the risk taken in managing cash flows of the order of £100 million per annum would be reflected in SONI's credit risk, and therefore in its cost of capital"*.[48] It commented that *"[i]n practice, the size of these cash flows is….so large relative to SONI's business and [equity] buffer that we do not consider it reasonable to assume that there is no incremental cost of managing this risk"*.[49]

More generally, the CMA observed that the use of a facility fee effectively regulated SONI's financial structure. The CMA found that this was not normal regulatory practice, and excluded any knock-on effect of managing incremental risks on SONI's cost of capital.

The CMA based its margin remedy in part on the approach followed for the EirGrid TSO by the then CER in Ireland, which provided a return on working capital for some revenues and a margin on revenues collected for others in order to remunerate EirGrid for managing those revenues.

Ofgem must ensure that its proposals are consistent with the CMA's findings

Ofgem's two base proposals in its consultation are inconsistent with the CMA's conclusions in its determination. Neither model recognises or remunerates the risks held by the ESO in delivering our licensed activities.

Model 1 does not reflect the asset-light, services nature of the ESO, nor does it reflect the predominant value of our business that lies in our people, processes and the contracts we operate. Model 2 could result in windfall profits in the first year but no revenue in subsequent years, and current consumers would pay for the whole investment upfront when the benefits may not be delivered until later years.

The CMA commented in its determination that:[50]

> *As a small, asset-light company, SONI's position is potentially different from that of many other regulated companies and hence the specific circumstances do need to be fully explored before determining the appropriate regulatory approach.*

Without decomposing the risks faced by the ESO across its various activities to ensure returns are reflective of these risks, Ofgem cannot simply assume that the RAV*WACC approach will sufficiently remunerate all of our activities. In the absence of specific remuneration for these risks, the ESO will have recourse only to the return on a RAV, which does not correlate with the risks that we bear; the return on a RAV does not change if this risk changes. This will drive the same dilemma faced by SONI – how to maximise outputs for existing and future consumers when the ESO is insufficiently remunerated and incentivised to do so.

[47] Ibid., paras 7.205 to 7.206
[48] Ibid., para 12.136
[49] Ibid., para 12.138
[50] Ibid., para 8.14

Conclusions

Applying the CMA's findings in its determination to our specific circumstances leads to the following conclusions:

- Much of the ESO's activity does not relate to, or scale well with, the level of our investment in fixed assets – meaning that the RAV*WACC approach alone will not reflect key characteristics of the business, and will fail to remunerate the ESO for certain additional risks to which we are exposed that do not correlate to the size of our investment in tangible fixed assets.
- Given the small relative size of the ESO's RAV, our high operational gearing, and the fact that our RAV fluctuates over time due to the nature of our asset base, simply adjusting the WACC level is unlikely to be a reliable approach to securing the ESO's financeability.
- The return assumptions within the allowed revenues should be aligned with the risks faced by the ESO, implying that it will be necessary to set appropriate remuneration on an activity-specific basis.

In respect of the ESO's revenue management role, the CMA's findings result in the following conclusions:

- Our revenue management role will inevitably have some effects on the aggregate risk and financing costs of the ESO as an entity.
- An approach that only reimburses the direct costs of performing this role – such as the provision of a working capital facility allowance (even on a pass-through basis) – will not sufficiently remunerate the ESO for the risks we face.
- Given the size of these risks is proportionate to the size of the operations we are managing, a margin-based approach is more appropriate than direct remuneration of our working capital facility costs.

In order to secure the ESO's financeability and incentivise us to innovate and invest on behalf of consumers, Ofgem should adopt the CMA's approach in its determination of including activity-specific 'layers' of remuneration in the ESO price control framework, including (but not limited to) a RAV*WACC and a return on external revenues transacted. This aligns with the approach Ofgem had outlined for consideration in the Sector Specific Methodology Consultation and is consistent with stakeholder feedback.

Appendix B – Risk modelling of the ESO's industry revenue management role[51]

This appendix sets out initial results from the ESO's industry revenue management risk modelling, which provides evidence of the direction and magnitude of the risks associated with this role.

Amongst our wider roles and responsibilities, the ESO carries out the industry revenue management role, collecting and distributing revenue across market participants for a number of network charges. These include BSUoS, TNUoS, and Connections charges, in addition to the management of wider funds, from users of the system to those parties incurring costs such as Assistance for Areas of High Electricity Distribution Costs.

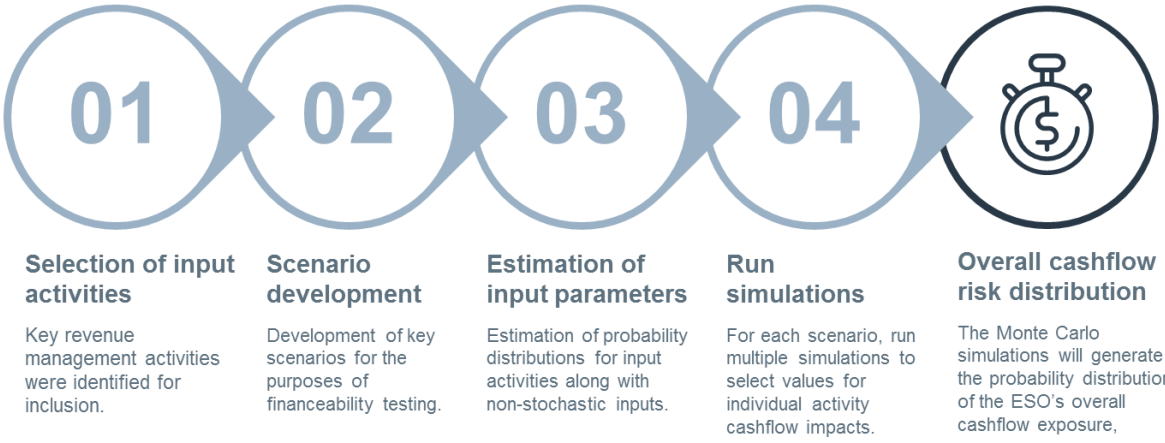
Due to the nature of the Connection and Use of System Code (CUSC), System Operator-Transmission Owner Code (STC), and wider processes surrounding these payments, there exist significant timing differences between when payments must be made and when cash is received by the ESO. Despite this, the ESO is responsible for ensuring market participants are paid for the services they provide, irrespective of whether the ESO has collected sufficient revenues from system users. These realities, combined with the fact that as part of the revenue management activities we transact over £4bn of cash annually, expose the ESO to significant liquidity and profit risk.

In this context, we have carried out risk modelling to illustrate the direction and magnitude of this risk, using historical outturn data and expert judgement to inform the potential scale of cash flow exposure to the ESO. This work is in progress; this appendix sets out our preliminary results, which may change as our work further develops.

The analysis focuses on understanding the scale and direction of cash flow exposure faced by the ESO in our industry revenue management role. Our key revenue management activities have been identified and their potential contribution to the overall cash impact on the ESO has been investigated as part of the Monte Carlo analysis.

The risk modelling analysis involved four key steps that are set out in Figure 5 below.

Figure 5: Risk modelling methodology



Selection of input activities

ESO activities to be included in this modelling were identified through a series of workshops with internal subject matter experts (SMEs), with a focus on activities that:

1. Form part of the ESO's day-to-day responsibilities under our industry revenue management role;
2. Have the greatest potential impact on ESO cash flows based on historic experience; and
3. Have a cash flow impact that lies primarily outside the ESO's control.

The list of revenue management activities included in the modelling is set out in Figure 6 below and spans the ESO's responsibilities for BSUoS, TNUoS, Connections charges, and other industry charges. This list is not exhaustive and is subject to change.

[51] All numbers quoted are provisional and subject to change

Figure 6: Final input activities for risk modelling

Activity		Description
TNUoS	TNUoS K	Two-year delay on recovery of differences between ex ante forecast recoverable revenue and ex post actual charges for use of the transmission system
	TNUoS Billing and Collection	Differences in TNUoS recovery due to customer forecasts for billing
BSUoS	RF Billing	Reconciliation of unbilled contracts and market actions taken by the ESO in balancing the system
Terminations	Termination Fee Default	Risk that connection parties default on contract termination amount
	Termination Fee mismatch	Difference between termination account and obligation to cover costs incurred by TOs
Supplier failure	Major Supplier Failure	Bad debt arising from failure of major supplier
	Small customer failure	Bad debt arising from failure of smaller suppliers
Other charges	AAHEDC	Delay in recovery of difference between ex ante forecast and ex post realised Assistance for Areas with High Electricity Distribution Costs
	Ofgem Licence Fee	Differences between forecast fees included in charges and actual costs incurred
	Inter-TSO Compensation recovery	Two-year lag associated with EU charges for cross-border use of transmission systems
	Income adjusting events	Impact of Income Adjusting Events (IAE) that can drive a mismatch between revenues being collected and cost obligations
	Connections charge mismatch	Differences between calculation and timing of site-specific connections charges from customers and obligations to TOs

Scenario development

Having identified the input activities for inclusion in this risk modelling, a number of scenarios were developed to understand the impact of the revenue management role on the ESO. Specifically, the selection of scenarios was designed to differentiate between those cash flow impacts that are purely liquidity risks and those that are revenue-based, and therefore result in a true profit exposure.

Furthermore, while income adjusting events (IAEs) have previously had large negative impacts on ESO cash flow, and therefore should be included in any risk modelling, their inherent characteristics suggest that they are less well suited for Monte Carlo analysis. Unlike the other risks listed in Figure 6, Ofgem has discretion in determining whether an event falls under the definition of an IAE and costs are passed through to the ESO.[52] Consequently, we believe the most appropriate way to reflect the impact of these risks is through a fixed adjustment rather than defining a probability distribution for the frequency and size of these events.

[52] Policy – Income Adjusting Events in Offshore Transmission Owner Licenses, Ofgem, 28 November 2018. https://www.ofgem.gov.uk/system/files/docs/2018/11/iae_response_-_final_0.pdf

The final scenarios set out in this analysis are as follows:

- **Scenario 1** – All cash flow risks except for IAEs.
- **Scenario 2** – All profit risks except for IAEs, i.e. excluding those risks that do not affect revenue and therefore are not expected to contribute to the ESO's profit exposure.
- **Scenario 3** – All cash flow risks including IAEs.

Estimation of input parameters

Monte Carlo simulation requires a pre-determined probability distribution to be defined for each stochastic input, which in this case is the set of input activities (with the exception of IAEs, which are considered in Scenario 3 as a fixed parameter).

The selection of probability distributions is based on existing academic and regulatory precedent for cash flow risk modelling, with individual parameters chosen based on historic outturn data and forward-looking expert opinion. For the majority of input activities, the PERT (Programme Evaluation and Review Technique) distribution was considered to be the most appropriate probability distribution. The PERT distribution is widely used in risk modelling and is particularly well suited for modelling uncertain risks when estimates are based on expert judgement rather than analysis of large sample data-sets. Ofgem has previously used the PERT distribution to model uncertain costs as part of its RIIO-T1 cash flow risk analysis.[53]

Unlike other common distributions such as the lognormal distribution, which would require experts to estimate higher order moments, the PERT distribution is defined by the minimum, maximum, and 'most likely' (modal) values, which are more intuitive measures. Research has found that 'people are capable of estimating proportions, modes and medians of samples, but are slightly less proficient at assessing sample means if the sample distribution is highly skewed; and often have serious misconceptions about variances'.[54] Consequently, use of the PERT distribution in conjunction with expert judgement is likely to result in better estimates.

The PERT distribution offers improvements to the often-used triangular distribution, which is also defined using maximum, minimum and most likely values. Compared to the triangular distribution, PERT places less weight on the extreme values and more on the modal value. Given there is no upper limit to the size of potential cash flow shortfalls, this implies a wide range of potential values, and therefore the use of alternative three-point distributions such as PERT are a more appropriate option than the triangular distribution.[55]

Individual parameter estimates are based on historic outturn data, adjusted to reflect any regulatory changes such as the phased transition of the export credits tariffs in 2018/19 that are expected to be carried forward to RIIO-2, as well as forward-looking expert opinion.

Where the ESO holds historic data that allows an alternative distribution to PERT to be used for individual input activities, this has been reflected in the analysis. In the case of risks relating to termination, this has been sized based on the ESO's current exposures.

In addition to stochastic inputs, a limited number of fixed input parameters were used in the risk modelling:

- Termination fee mismatch margins – expected mismatch margin has been based on historic TPG-TPRG[56] mismatch.
- Income adjusting events – as discussed above, rather than modelling IAEs as a stochastic input, their potential impact is captured as a fixed input in Scenario 3. Under this scenario, an additional downside cash flow impact of c.£8m is applied, which is based on the impact of the recent Gwynt y Mor IAE.

Run simulations

Taking these input assumptions, 10,000 simulations were run for each scenario using ModelRisk software. For each 'run', the value of cash flow risk associated with each input activity was randomly selected from the relevant distribution and aggregated to calculate the total cash flow exposure of the ESO arising from our revenue management role.

[53] RIIO-GD1: Final proposals – Finance and uncertainty supporting document, Ofgem, 17 December 2012
[54] Statistical methods for eliciting probability distributions, Garthwaite et al, 2005
[55] Improved modelling of three-point estimates for decision making: going beyond the triangle, Calhoun National Institute, 2016
[56] These are licence terms

Findings

The outcomes of the Monte Carlo simulation are set out in Figure 7 below.

Figure 7: Monte Carlo simulation outputs

Scenario	Mean	Probability of a negative cashflow impact
Scenario 1 Cash flow exposure excl. IAEs	(£138m)	99.7%
Scenario 2 Profit exposure excl. IAEs	(£78m)	96.9%
Scenario 3 Cash flow exposure incl. IAEs	(£146m)	99.8%

Scenario 1 clearly demonstrates that, not only does the revenue management role lead to a significant mean cash exposure of c.£140m on average, in over 99% of cases the ESO can expect to see a negative cash flow impact. It is clear that this role introduces significant asymmetric risk with very limited opportunity for any upside in either scale or probability. This downside risk is further exacerbated once the impact of IAEs is accounted for, with previous events amounting to c.£8m of cash exposure for the ESO.

Furthermore, these findings demonstrate that even when liquidity-only risks are removed (Scenario 2), the ESO can expect to see significant profit exposure in most cases, which cannot be addressed through a WCF. This profit exposure opens up additional risks around securing an investment grade credit rating; the ability to provide assurances over financeability of the notional company; and the proposition for attracting investors and providing adequate returns to them.

It is important to note that these outputs relate only to the expected cash flow and profitability impact in a given year, and do not account for the fact that some of these timing lags span over a longer period. For example, TNUoS K recovery is over a two-year period, and shortfalls due to customer defaults may take even longer to recover. The sizing of a WCF must consider the range of potential exposures as well as the timeframe over which these exposures might be held.

The analysis above does not represent our view of required liquidity arrangements; in addition, this analysis is focused purely on timing risk associated with our revenue management role and does not cover other cash timing-based risk.

The outputs below are shown in aggregate.

Figure 8: Scenario 1 outputs

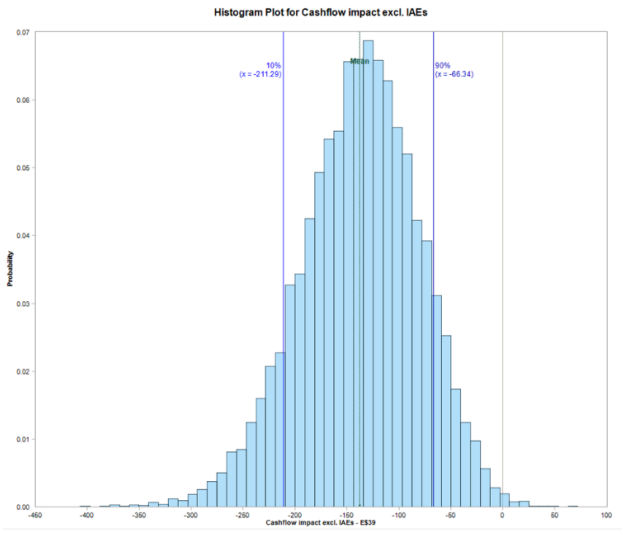


Figure 9: Scenario 2 outputs

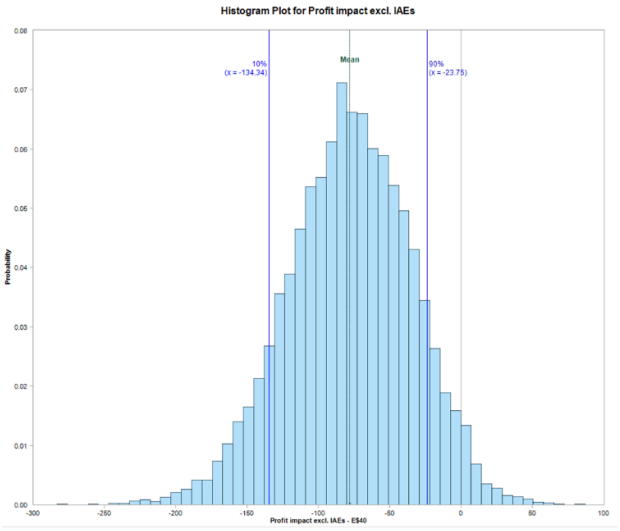
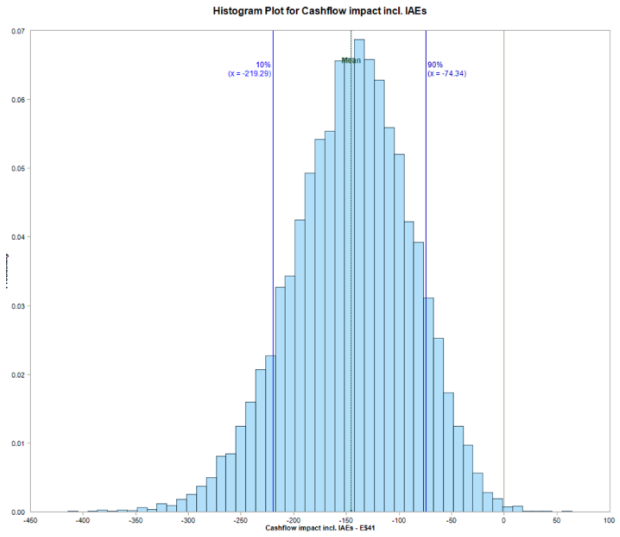


Figure 10: Scenario 3 outputs



The scale and probability of these risks lie mainly outside of the ESO's control and are characterised by unlimited downside. In the case of TNUoS K, although we have some influence over this risk when setting annual charges through estimating demand, it is also driven by other factors such as unexpected weather events. In the case of TNUoS billing and collection, it relates to counterparties forecasting their own annual charges, which differ from ex post actuals. While the ESO monitors the forecasting performance of counterparties, the current codes prevent us from making corrections to counterparty forecasts while they remain within the 20% threshold, resulting in significant scope for misalignment at the aggregate level.

Similarly, in the event of a connection contract termination, the ESO is obligated to cover costs incurred and charged by the relevant TO, even when these costs exceed the termination charge we receive. We have no control over the termination charge associated with individual projects as this is determined by the CUSC, nor can we control the expenditure profile of the TOs. This can lead to large potential mismatches, especially on the larger connection programmes.

Ofgem has previously acknowledged that the risk of supplier default is not entirely avoidable. While the ESO does hold security against this risk, this does not fully cover our exposure, nor can it be adjusted at our discretion. Ofgem has provided a potential route for socialising such debt (which has not yet been formalised),

but there remains a timing difference between default and eventual recovery of this ‘bad debt’ that will need to be fully managed by the ESO.

Under the current system, BSUoS costs are billed daily within 21 days of the settlement day (SF billing), and reconciled 14 months after the settlement day to update costs being recovered on an ex post basis (RF billing). This means that, risks associated with bad debt aside, the majority of cash flow risk associated with BSUoS charges sits with RF billing. However, any outcome from the BSUoS Charging Task Force to fix BSUoS tariffs in advance would expose the ESO to ex ante forecast risks like those currently experienced in relation to TNUoS charges. These risks have not been captured in this modelling exercise, but should this change be introduced, it would add cash flow risk to the ESO.

Our analysis clearly finds that the revenue management role introduces significant levels of cash flow and profit risk to the ESO, with a mean cash exposure of c. £140m and profit exposure of c.£80m even before taking into account the impact of IAEs. This risk is highly asymmetric, with a negative cash flow outcome expected in over 99% of scenarios, and very limited potential for upside both in terms of probability and value.

Finally, this analysis only quantifies the scale of ‘new’ cash and profit exposure expected in any given year. For a number of these risks, the recovery of any cash shortfall can span over more than a year. Consequently, the ESO’s cumulative expected cash and profit exposure is likely to exceed the values set out in this appendix, and any liquidity management solution would need to consider this as well as the broader range of negative outcomes.

Appendix C – Initial financeability analysis

To support the conclusions set out in the body of our response, we have undertaken some simplified financial modelling. This analysis is based on a number of assumptions drawn from the ESO July Draft Business Plan and Ofgem's Sector Specific Methodology Decision Finance Annex, and our own judgement. At present, no working assumptions have been issued by Ofgem regarding any ESO specific parameters, e.g. Cost of Equity, Cost of Debt or notional capital structure. All analysis presented is illustrative and subject to change as the funding model for the ESO is agreed and financial parameters are developed and calibrated.

As part of this analysis we have reviewed three main scenarios:

1. Model 1 – RAV*WACC with no additional margins;
2. Model 1 with margins ('Layered' Model) – RAV*WACC with margin on internal costs and margin on external costs; and
3. Model 2 – 100% Fast Money.

The key assumptions used are summarised in Figure 11 below:

Figure 11

	Ref	RAV*WACC no margins (Model 1)	RAV*WACC with margins (Layered Model)	100% Fast Money (Model 2)	Source / Notes
Operating Costs	A	£150m	£150m	£150m	Business Plan Submitted 1 July Five-year average for the years 2021/22 to 2025/26 Quoted in 2018/19 prices
Capital Expenditure	B	£115m	£115m	£115m	
Incentives		£0m	£0m	£0m	Illustrative
Opening RAV		£230m	£230m	£230m	Opening position at 1 April 2021, indexed to 21/22 prices
Closing RAV		£513m	£513m	£35m	Closing position at 31 March 2026, indexed to 25/26 prices
Cost of Debt	C	1.93%	1.93%	1.93%	Ofgem Sector Specific Methodology Decision – Finance[57]. Table 20, page 121
Cost of Equity	D	4.8%	4.8%	4.8%	Ofgem Sector Specific Methodology Decision – Finance. Table 21, page 121 (before outperformance wedge)
Gearing	E	60%	60%	60%	Ofgem Sector Specific Methodology Decision – Finance, Table 20, Page 121
Implied WACC		3.08%	3.08%	3.08%	Calculated (=C*E+D*(1-E))
Annual CPI Inflation		2.0%	2.0%	2.0%	
Fast/Slow Split (Capitalisation rate)		56.6%	56.6%	56.6%	Calculated (=A / (A+B))
RAV Depreciation period		7 years	7 years	7 years	In the 100% Fast Money scenario, this applies to the brought forward legacy RAV only As per RIIO-T1
Operating Cost Margin		N/A	2.0%	N/A	Illustrative

[57] https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_finance.pdf

	Ref	RAV*WACC no margins (Model 1)	RAV*WACC with margins (Layered Model)	100% Fast Money (Model 2)	Source / Notes
TNUoS external cost Margin		N/A	0.50%	N/A	Illustrative
BSUoS external cost Margin		N/A	0.25%	N/A	Illustrative
All scenarios assume that dividends will be distributed based on cash availability and not restricted					
Equity will be injected as necessary to support investment and notional gearing of 60% to RAV					

No formal guidance has yet been issued by Ofgem on how the financeability of the ESO will be assessed. As we set out in the body of our response, we believe that this assessment should consider credit and equity metrics as well as liquidity, and the ability of the organisation to absorb shocks or downside scenarios. To support our response, we have assessed each of the models using a range of metrics, and have highlighted a selection of these with indicative thresholds below. The tables that follow on each of the scenarios use the thresholds set out.

Figure 12

Metric	Threshold		Precedent
	Amber	Green	
Debt/Capitalisation	<55%	<45%	Total debt to capitalisation ratio is a gearing and solvency measure that shows the proportion of debt a company uses to finance its assets, relative to the amount of total capital. This metric forms part of Moody's Regulated Utilities Rating Assessment Grid, with thresholds based on Moody's Baa and A threshold levels.
Adjusted Interest Cover Ratio	>1.4x	>1.7x	This is a debt metric to understand whether a company can pay their debt interest expenses. This metric is a core part of Moody's Regulated Networks Rating Assessment Grid, with 1.4x being the threshold for Baa rating.
EBIT Margin on Controllable Revenue	>10%	>12%	Level of EBIT as a proportion of controllable revenues. This is often used as a measure of financial performance for asset-light companies. Thresholds are set based on indicative benchmarks: SONI c.12%, EirGrid c.14% and Moody's methodologies for asset light organisations.
EBIT Margin on Total Revenue	>1%	>1.5%	Level of EBIT as a proportion of total transacted revenues. Thresholds have been set based on indicative benchmarks: SONI c.1.5% and EirGrid c.1.7%.

Model 1 - RAV*WACC no margins

Figure 13

Performance Metrics Model 1: RAV - no other margins	RIIO2 FY22	RIIO2 FY23	RIIO2 FY24	RIIO2 FY25	RIIO2 FY26
Debt/Capitalisation	62.46 %	63.65 %	64.66 %	65.60 %	66.16 %
EBIT margin on Total revenues	0.14 %	0.21 %	0.27 %	0.34 %	0.39 %
EBIT margin on Controllable revenues	3.01 %	4.31 %	5.31 %	6.35 %	7.02 %
Equity Cashflow	-19.04	-22.72	-15.97	-5.00	5.98
Equity Cashflow / Share Capital	(17.28%)	(17.09%)	(10.73%)	(3.25%)	3.89 %
Adjusted Interest Cover	1.36	1.38	1.39	1.35	1.32
Dividends / RegEquity	-	-	-	-	2.92 %

The above metrics suggest that, under the modelled parameters, a RAV*WACC framework with a WACC based on the assumptions listed above and no margins does not allow the baseline threshold to be met on any of the metrics, suggesting that operational headroom is very thin. This is unlikely to provide sufficient financial headroom for the ESO to manage the risks we are exposed to. This also declines if we extend our analysis to RIIO-3. The results suggest that under this framework the ESO may have difficulty attracting debt funding.

It is possible to improve the metrics through increasing the assumed WACC. The results suggest that this would need to more than double to achieve an EBIT margin on controllable revenue of 10% on average across RIIO-2.

A lower geared capital structure was tested to see if the RAV*WACC model with no margins became more financeable under a different notional structure. Under a 30% gearing assumption, debt financeability improves, with AICR increasing and debt/ capitalisation decreasing to meet the indicative thresholds. However, the equity story worsens with a greater share of capital being supported by low EBIT margins. Low equity yields and high operational and reputational risks suggest the ESO may have difficulty attracting equity funding on a standalone basis. Being financeable on a standalone basis is one of the key objectives highlighted in the main body of our response.

Model 1 – RAV*WACC plus margins (Layered Model)

Figure 14

Performance Metrics Model 1: RAV + all margins	RIIO2 FY22	RIIO2 FY23	RIIO2 FY24	RIIO2 FY25	RIIO2 FY26
Debt/Capitalisation	62.46 %	63.65 %	64.66 %	65.60 %	66.16 %
EBIT margin on Total revenues	0.57 %	0.64 %	0.70 %	0.77 %	0.83 %
EBIT margin on Controllable revenues	11.33 %	12.19 %	12.77 %	13.41 %	13.76 %
Equity Cashflow	-1.73	-4.77	2.69	14.71	26.20
Equity Cashflow / Share Capital	(1.86%)	(4.88%)	2.75 %	15.06 %	26.82 %
Adjusted Interest Cover	3.38	3.09	2.90	2.76	2.70
Dividends / RegEquity	0.00 %	0.00 %	1.48 %	7.35 %	12.77 %

The introduction of margins on operational and external costs improves the majority of metrics, suggesting that this model has the greatest potential to enable a financeable framework. Further calibration of the parameters and baseline assumptions will be required to achieve this, and we look forward to working with Ofgem to develop this.

Model 2 – 100% fast money

The same metrics look much improved under the 100% fast money scenario. However, if this analysis is extended out to the RIIO-3 period, the metrics rapidly decline as the legacy RAV unwinds and the framework stabilises, with no returns being generated once RAV has declined to zero.

It should also be noted that credit rating agencies are likely to make adjustments for excess fast money in the early part of the plan, equally reducing metrics. We have included adjusted metrics in the below table that 1) remove all excess fast money in the year and 2) reintroduce a slow money element over the following years to provide more indicative views of what a rating agency may assume.

This again suggests that, despite the appearance of strong metrics in the short-term, the framework is not able to sustain a financeable position.

Figure 15

Performance Metrics **Model 2: All 'fast money' - no other margins**	**RIIO2 FY22**	**RIIO2 FY23**	**RIIO2 FY24**	**RIIO2 FY25**	**RIIO2 FY26**
Debt/Capitalisation	36.78 %	22.46 %	13.68 %	8.11 %	4.48 %
EBIT margin on Total revenues	2.35 %	2.42 %	2.00 %	1.40 %	0.64 %
EBIT margin on Controllable revenues	34.82 %	34.76 %	29.65 %	21.97 %	11.04 %
EBIT margin on Total revenues (Excess FM)	(0.06%)	(0.36%)	(0.71%)	(1.03%)	(1.33%)
EBIT margin on Controllable revenues (Excess FM)	(0.89%)	(5.17%)	(10.47%)	(16.15%)	(22.83%)
EBIT margin on Total revenues (Capex adjusted)	(0.06%)	(0.03%)	(0.02%)	0.01 %	0.03 %
EBIT margin on Controllable revenues (Capex Adjusted	(0.89%)	(0.49%)	(0.27%)	0.18 %	0.58 %
Equity Cashflow	19.20	17.81	16.28	14.12	11.40
Equity Cashflow / Share Capital	18.55 %	17.20 %	15.72 %	13.64 %	11.01 %
Adjusted Interest Cover	16.39	23.05	27.57	30.18	29.66
Adjusted Interest Cover (Excess FM)	0.31	0.38	0.48	0.58	0.70
Adjusted Interest Cover (Capex Adjusted)	0.31	3.04	7.37	13.26	20.72
Dividends / RegEquity	26.05 %	31.96 %	41.26 %	55.57 %	80.49 %