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Making a positive difference for energy consumers

Decision

RIIO-2 Final Determinations – Electricity System Operator (REVISED)

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Our aim for the RIIO-2 price controls is to ensure energy consumers across Great Britain (GB) get better value for money, better quality of service and environmentally sustainable outcomes from their networks.

In 2019, we set out the framework for the price controls in our Sector Specific Methodology Decisions. In December 2019, transmission and gas distribution network companies and the electricity system operator (ESO) submitted their business plans to Ofgem setting out proposed expenditure for RIIO-2. We assessed these plans and published our consultation on Draft Determinations for company allowances under the RIIO-2 price controls in July 2020.

This document and others published alongside it, set out our Final Determinations for company allowances under the RIIO-2 price control, which will commence on 1 April 2021.

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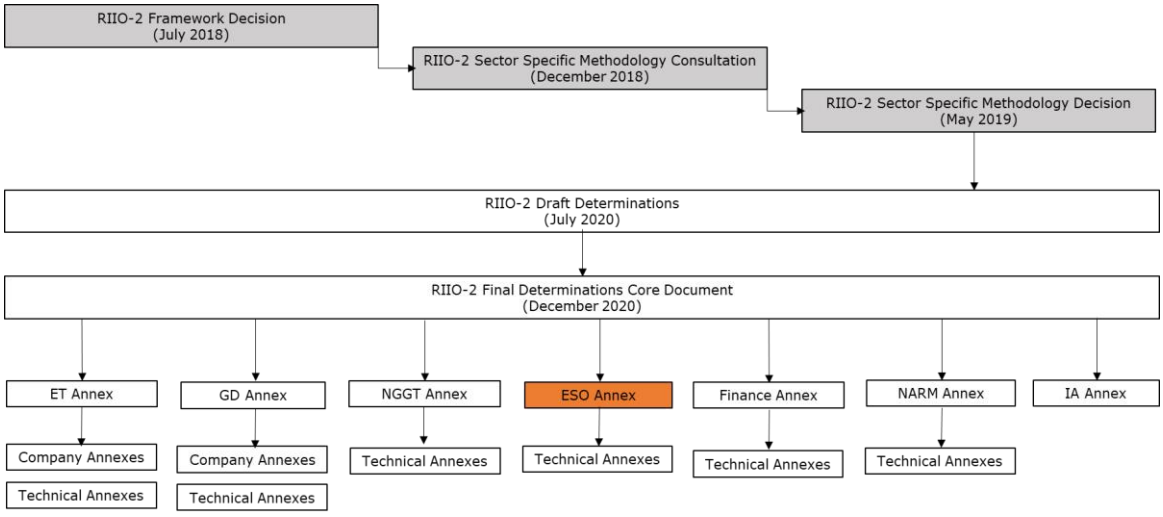
1. Introduction and overall package

Purpose of this document

1.1 This document sets out our Final Determinations for the electricity system operator (ESO) RIIO-2 price control. This price control will cover the five-year period from 1 April 2021 to 31 March 2026.[1] All figures in this document are in 2018/19 prices except where otherwise stated.

1.2 This document should be read alongside the RIIO-2 Final Determinations Core Document (the Core Document) and the RIIO-2 Final Determinations Finance Annex (Finance Annex). Figure 1 sets out where you can find information about other areas of our RIIO-2 Final Determinations.

Figure 1: RIIO-2 Final Determinations documents map



What do we expect the ESO's RIIO-2 price control to deliver for consumers?

1.3 The ESO has a central role in our energy system. It performs several important functions from the real time operation of the system, through to market development, managing connections, and advising on network investment. On 1 April 2019, the ESO separated from National Grid Electricity Transmission (NGET) and became a legally distinct company within the National Grid Group. This

[1] For certain elements, such costs and outputs, our decisions are applicable for the ESO's two-year Business Plan period from 1 April 2020 to 31 March 2023. This is explained throughout the document.

separation enables the ESO to set its own vision for its system operator role and to better prioritise wider system and consumer interests in its decision-making.

1.4 Achieving a Net Zero energy system is likely to require a fundamental change to how our gas and electricity networks are built and operated. The ESO can unlock substantial benefits for consumers by helping to shape the best pathway to Net Zero. It is vital that the ESO responds to this challenge and plays its part in delivering a reliable and resilient zero-carbon energy system at the lowest cost to consumers.

1.5 For the ESO to make the most of this opportunity, we need it be proactive, forward-looking, and ambitious. We also need it to work closely with other industry parties and wider stakeholders to ensure there is a coordinated, whole system approach to solving energy system challenges. Finally, we need the ESO to be agile and ready to adapt to emerging issues.

1.6 By the end of the RIIO-2 price control, we expect to see an ESO that has delivered its RIIO-2 ambitions[2] and gone further in some areas. This includes the ESO:

- having the ability to operate the electricity system carbon free by 2025
- ensuring all types of technologies and solutions are able to compete fully to meet the electricity system's short, medium and longer term needs
- coordinating closely with network operators to ensure there is seamless integration between ESO and distribution level flexibility markets, as well as a consistent, whole system approach to operations and planning
- shaping the evolution of the energy system, by providing trusted analysis and recommendations that ensure decisions are taken that optimise outcomes for consumers across transmission and distribution networks.

1.7 We also expect the ESO to take on expanded responsibilities during RIIO-2. As set out in the Core Document, the ESO is currently developing an Early Competition Plan (ECP) which will recommend options for the introduction of early competition in transmission networks. We are also exploring options for a more coordinated offshore transmission system and have asked the ESO to take forward an options assessment in this area.[3] We have designed the price control so that it has the flexibility to accommodate these changes.

[2] ESO RIIO-2 ambitions: https://www.nationalgrideso.com/document/141256/download
[3] Ofgem decarbonisation action plan: https://www.ofgem.gov.uk/system/files/docs/2020/02/ofg1190_decarbonisation_action_plan_revised.pdf

1.8 This is the first bespoke price control for a legally independent ESO. Our overall approach to the ESO's incentives and price control design recognises that much greater value is drawn from the ESO's delivery of wider energy system outcomes, than from achieving efficiencies within its internal expenditure. The introduction of a pass-through funding approach, supported by incentives to deliver value for money, will enable the ESO to be agile and adapt quickly as the pathway to Net Zero evolves.

1.9 We have reflected closely on the views of the ESO and stakeholders to ensure our price control decisions give the ESO the right resources and incentives. Following your feedback, we have ensured the reward for the ESO to act innovatively and ambitiously outweighs the risks it is exposed to in doing so. Taken as a package, our Final Determinations provide the ESO with the funding it needs to deliver its Business Plan, a fair return for the risks it faces, and a strong incentive reward for excellence. We agree that successful delivery of an ambitious plan should translate into a reward for the ESO. Our grading of the ESO's Business Plan makes clear that if the ESO achieves demonstrable progress on the outcomes set out in its Business Plan, then that would result in an incentive reward.

1.10 Finally, we have reflected on comments from the RIIO-2 Challenge Group (CG) and several other stakeholders that we should look to develop performance measures that are more clearly linked to the ESO's strategic goals. We have included two new measures that directly relate to the ESO's zero-carbon operation ambition. Our experience over the next two years will allow us to further refine the performance measures for the ESO's second Business Plan from April 2023.

An overview of the ESO's RIIO-2 price control

1.11 Our design of the ESO's RIIO-2 price control is unique to the ESO. For the ESO's price control, we will not have total expenditure (totex) allowances or a Totex Incentive Mechanism. We are also not setting discrete, mechanistically calculated Output Driven Incentives (ODIs). Instead we have designed one overall incentives scheme that evaluates the ESO's combined performance on outputs and costs, across the spectrum of its roles. We will also reconsider certain aspects, including costs and outputs, after two years rather than every five years. This means we do not need the same degree of uncertainty mechanisms as other sectors.

1.12 Table 1 provides an overview of where you can find our Final Determinations for the key components of the price control. We have also outlined the key values

where applicable. Some proposals apply to the whole five-year RIIO-2 period, while others only apply to the ESO's first Business Plan period from 1 April 2021 to 31 March 2023 (BP1). We indicate this throughout the document.

Table 1: Overview of key decisions on the ESO's RIIO-2 price control

Outputs and performance incentives	Incentive scheme design	Chapter 2	n/a	RIIO-2[4]
	Incentive scheme value	Chapter 2	£-12m to £30m (over two years)	RIIO-2[5]
	Licence obligations	Chapter 3	n/a	Ongoing
	ESO Roles Guidance	Chapter 3	n/a	RIIO-2
	ESO Delivery Schedule	Chapter 3 and Appendix 1	Role 1: 5/5 Role 2: 4/5 Role 3: 4/5	BP1
	Performance measures	Chapter 3 and Appendix 2	n/a	BP1[6]
	Cost benchmark	Chapter 4	£504m (over two years)	BP1
	Disallowance of Demonstrably Inefficient and Wasteful Expenditure	Chapter 4	Cap on annual disallowance of 2.5% RAV	RIIO-2, apart from cap value which is for BP1
Baseline financial returns	Allowed return on debt	Chapter 5	-0.07%	RIIO-2
	Allowed return on equity	Chapter 5	7.55%	RIIO-2
	WACC Allowance	Chapter 5	3.36%	RIIO-2
	ESO Additional funding	Chapter 5	£4.8m per year plus a pass-through (~£0.7m-£0.9m) of certain costs	BP1
	Capitalisation Rate, Depreciation Allowance, and other financial decisions	Finance Annex	n/a	Mixed – see Finance annex
Innovation funding	Network Innovation Allowance	Chapter 6	£20.7m (over 5 years)	RIIO-2, with opportunity to increase after BP1
	Strategic Innovation Fund	Core Document	n/a	RIIO-2
Adjustments for uncertainty	Approach to ESO price control adjustments	Chapter 7	n/a	RIIO-2
	Financial uncertainty mechanisms (including indexation)	Finance Annex	n/a	RIIO-2

[4] The overarching framework. We will consider incremental improvements within RIIO-2 where beneficial.
[5] Subject to a future decision on the timing and length of ESO's third Business Plan.
[6] Except for our approach to stakeholder surveys which we intend to put in place for the whole of RIIO-2.

Next steps and further work

1.13 Shortly we will consult on the detailed implementation of the policy decisions in our Final Determinations, including changes to the licence and associated licence documents. For the ESO, this will include consulting on detailed changes to two key regulatory framework documents:

- The ESO Roles Guidance (which sets out our detailed expectations for the ESO under its licence obligations and incentives)
- The ESO Reporting and Incentives (ESORI) Arrangements Guidance (which contains detailed guidance on the incentives processes for the ESO).

1.14 As part of the ESORI Arrangements Guidance consultation, we will be seeking additional views on the final details for certain performance measures for BP1, including the ESO's balancing cost metric. We believe it is pragmatic to consider further the detailed inputs for this methodology because of the uncertainty on appropriate balancing costs caused by the Covid-19 pandemic. Our decision on the ESORI Arrangements Guidance next year will also confirm some further details on the ESO's incentives reporting for costs and outputs.

1.15 Next year we also plan to issue two further documents:

- the ESO's Regulatory Instructions and Guidance (RIGs), which we are reviewing to ensure they are appropriate for the new price control
- guidance for the ESO's second RIIO-2 Business Plan (BP2), including the length, requirements, and final submission timings.

1.16 As discussed in Chapter 8, we continue to hold concerns over the ESO's reliance on the National Grid shared IT service model and, on the evidence currently before us, we see a strong case for full ESO IT autonomy. Given the complexity of this issue and recognising the links with our wider review of system operator governance arrangements, we now intend to progress this issue outside of RIIO-2. We are aware that National Grid businesses and the ESO will be making substantial investments in the coming months within the existing shared IT services model. We intend to work closely with the ESO and National Grid before RIIO-2 commences, to ensure that any such investments are future-proofed against credible future scenarios and do not become a barrier to any future IT autonomy for the ESO, and to understand any impact of this on Business Plans.

2. Incentives framework

Introduction

2.1 This chapter sets out our decisions for the ESO's incentives framework for RIIO-2. First, we summarise how the approach we take to the ESO's incentives is different from the approach for other RIIO-2 companies, before setting out our decisions on the incentive scheme scope, design and value. A summary of our decisions is in Table 2.

Table 2: Key incentive framework features

Policy	Final Determinations	Draft Determination	Applicable timeframe
Scheme scope	All ESO activities, incorporating EMR and system restoration costs.	Same as Final Determination	RIIO-2
Scheme design	Evaluative framework based on ESO's performance delivering the Business Plan. Changes from RIIO-1 scheme to set out more granular performance expectations; increase the scheme length from one to two years; introduce a new independent Performance Panel chair; provide scores and feedback to the ESO every six months; assess value for money; and increase transparency in the decision-making process.	Broadly consistent with Final Determination, although we proposed to maintain an Ofgem Performance Panel chair and to provide scores and feedback to the ESO less regularly.	RIIO-2
Scheme value	£30 to -£12m (over two years)	Same as Final Determination	RIIO-2

Sector specific approach to ESO incentives

2.2 In Chapter 4 of our Core Document, we describe our approach to setting outputs and incentives for RIIO-2 network companies. The approach we use for the ESO is different to this. In our May Sector Specific Methodology Decision (SSMD), we set out our decision to continue with the ESO-specific performance framework we introduced for the last three years of RIIO-1.

2.3 For the ESO, we use an overarching performance scheme instead of multiple, discrete ODIs. This scheme is designed to drive strong performance across three ESO Roles: control room operations; market development and transactions; and system insight, planning and network development.

2.4 The performance scheme uses an evaluative approach. This means we set up-front expectations, evaluation criteria and performance measures, and then make a final decision on incentives at the end of the incentive scheme period. This evaluation is based on an ongoing assessment of the ESO's performance, drawing input from stakeholders and an external panel (the Performance Panel). Our approach recognises that given the ESO's unique and central role in the energy system, strong performance is best assessed by a wider range of measures, and that a focus on numeric targets is unlikely drive optimal ESO behaviours. We believe an evaluative approach is better suited to driving the proactive, flexible, and collaborative behaviours we need from the ESO for GB to meet Net Zero at lowest cost to consumers.

2.5 Throughout this chapter and the next, we refer to several different terms used to define the ESO's outputs and incentives framework. For reference, these are listed and defined in Appendix 5.

Scheme scope

2.6 The main areas which are not covered by the evaluative incentive scheme during RIIO-1 are the performance of the Electricity Market Reform Delivery Body (EMR DB), where we use a separate package of incentives, and system restoration costs, where we apply a cost disallowance mechanism. In our Draft Determinations we sought views on bringing our regulation of all ESO outputs under one consistent approach for RIIO-2.

Electricity Market Reform incentives

2.7 The ESO, in its role as EMR DB, is responsible for administering keys elements of the Capacity Market and Contract for Difference (CfD) arrangements, as well as advising government on capacity requirements. The current EMR DB regulatory regime, which covers its revenues, outputs and incentives, was introduced within RIIO-1 and applies to the period from April 2016 to March 2021.

Final Determination

Policy	Final Determination	Draft Determination	Applicable period
EMR DB incentives	Incentives on EMR DB costs and outputs will be integrated within the wider ESO RIIO-2 framework.	Same as Final Determination	RIIO-2

Final Determination rationale and Draft Determination responses

2.8 We are maintaining our Draft Determination position to integrate the EMR DB incentives within the wider ESO RIIO-2 incentives framework, as this was supported by all eight respondents who commented on this issue.

2.9 Although in agreement, several respondents commented that further focus should be on EMR performance measures to ensure that accountability of the EMR DB role is retained through the integration. We discuss stakeholder suggestions on EMR performance measures in Appendix 2. The ESO considered that to achieve wider benefits from the integration, there should be a review of the ring fence between the EMR DB and the ESO. We discuss this further in Chapter 8.

System restoration costs

2.10 The ESO procures services to restore the electricity system, in the unlikely event of blackout (known as Black Start services). During RIIO-1, the ESO is required to produce a methodology for the procurement of Black Start services and is subject to an annual efficiency check on its expenditure. We can currently disallow up to 10% of Black Start costs where the ESO does not follow the Black Start methodology. As a result, Black Start costs are not included in our incentives scheme (although other aspects of the ESO's performance in this area are).

Final Determination

Policy	Final Determination	Draft Determination	Applicable period
Regulation of system restoration costs	Remove the disallowance mechanism for restoration costs but retain the other aspects of this process, including the requirement to produce a robust Black Start strategy and methodology. The ESO's performance on system restoration policy will be considered through the incentives scheme, with restoration costs included in an overall balancing costs metric. The ESO's adherence to the Black Start methodology, and the quality of its strategy, will be considered as part of the incentives process.	Same as Final Determination	RIIO-2

Final Determination rationale and Draft Determination responses

2.11 We consider that regulating restoration and other operational costs in a consistent manner will minimise the risk of sending distortive signals on how the ESO should procure these services. We also believe that a power to disallow up to 10% of Black Start costs would create a disproportionate downside threat considering the ESO on a standalone basis. The ESO and most stakeholders that responded to this topic supported our Draft Determination position and rationale.

2.12 Two respondents expressed a concern that this could reduce the ESO's focus on ensuring restoration services are procured efficiently. We are confident that the combination of the balancing costs metric and licence obligations provides sufficient incentive on the ESO to ensure these costs are efficiently procured. More generally, we do not see a reason to be more concerned about inefficiency in these costs than other balancing costs, and so do not see a continued rationale for distinct treatment. Some respondents asked for greater clarity on how restoration costs would be factored into a balancing cost metric. We set out our positions on the balancing cost metric in Appendix 2.

Scheme design

2.13 The existing RIIO-1 ESO incentives scheme runs on an annual basis. The ESO engages with its stakeholders to produce a plan before the start of each year which includes deliverables and performance metrics for its three Roles. Stakeholders, the Performance Panel and Ofgem review this plan before the ESO publishes its final version. The ESO then reports on its progress against its final plan throughout the year, receiving feedback from stakeholders, ourselves and the Performance Panel mid-way through the year. At the end of the year, the Performance Panel performs a final evaluation against pre-defined criteria, producing scores from 1 to 5 for each Role. These scores set a default recommended payment or penalty for each Role and have an associated financial range. We then assess the Performance Panel's recommendations, as well as any further evidence submitted, to determine the final payment or penalty.

2.14 Below we discuss how we are adapting the scheme design in six areas: how we set performance expectations; the scheme length; the role of the Performance Panel; the timings and format of scheme evaluations; the evaluation criteria; and our process for making decisions on rewards and penalties.

Setting performance expectations

Purpose: to create shared understanding of what constitutes baseline and exceeding expectations under an evaluative approach.

Benefits: setting clear performance expectations supports an effective incentive scheme.

Final Determinations

Area	Final Determination	Draft Determination	Applicable period
Expectations setting	We will update the existing ESO Roles Guidance to clearly set out what is needed to exceed expectations.	Same as Final Determination	RIIO-2
Delivery Schedule grading	We will grade the ESO's Delivery Schedules against our expectations to indicate the link more clearly between on track plan delivery and incentive performance.	Same as Final Determination	RIIO-2
Setting performance measures	We will set all performance measures, including Performance Metrics, stakeholder surveys and Regularly Reported Evidence.	Same as Final Determination	RIIO-2

2.15 Further detail on how we are adapting the ESO Roles Guidance, our final Delivery Schedule grading for BP1, and our decisions on specific performance measures for BP1 are set out in Chapter 3.

Final Determination rationale and Draft Determination responses

2.16 Most respondents to this topic, including the ESO, supported our specific proposals. We already provide expectations within our ESO Roles Guidance but believe there is value in strengthening this by clearly setting out what exceeds our expectations. We consider that performing a focussed grading of the ESO's Delivery Schedule against these expectations will set a clear reference point that will align expectations about the link between plan delivery and incentive performance. It also helps to mitigate perverse incentives on the ESO to develop future Business Plans that are easy to outperform. By setting all performance measures ourselves, we can remove the potential for misaligned expectations on measures put forward by the ESO.

2.17 Whilst supporting the proposals, the ESO reiterated its view that in the current RIIO-1 scheme there is no shared understanding of baseline performance. The ESO believes it is difficult for Ofgem and the Performance Panel to justify deviating from the mid-point of the incentive range. With reference to the Delivery Schedule grading, the ESO also stressed it was important that we make use of the evaluative nature of the scheme by taking into account circumstances where activities were not delivered on schedule for good reasons or due to factors outside of its control.

2.18 We believe the ESO's RIIO-1 incentive outcomes are reflective of its performance, as discussed further in the section on scheme value below. Nevertheless, our decisions in this area are directly shaped by feedback from the ESO that they find it difficult to understand performance expectations. We believe these process changes will drive greater predictability in incentive outcomes, which will strengthen the power of the incentive. We note the ESO's request for us to both set clear performance expectations and make use of the evaluative nature of the scheme. We believe there is a trade-off between these objectives. In order to more firmly prescribe performance expectations ex ante we inevitably need to make less use of ex post evaluation (and vice versa). We consider our decisions on the scheme design achieve the right balance.

2.19 Two respondents felt that the there was still too much uncertainty in the scheme. However, they did not provide specific details on any changes or alternative approaches to our proposals in this area. One of these respondents felt that the proposals to grade the ESO's Delivery Schedule and set performance measures could lead to additional bureaucracy and complexity, constraining the ambition of the ESO. We disagree with this comment. We consider the work required to set these expectations will be justified by benefits gained from a sharpened incentive scheme. We also note the ESO has not expressed concerns that these particular measures could constrain its ambition.

2.20 Two respondents noted that we should consider of stakeholder views when we set performance expectations. We agree this is important. We take account of stakeholder views on the expectations, Delivery Schedule grading and performance measures through:

- our review of the stakeholder feedback elements of the ESO's Business Plans
- our Draft Determinations and consultations on the ESO Roles Guidance document

- engagement with the Performance Panel, who reviewed our proposals over the summer, and who have a role reviewing future Business Plans and subsequent Ofgem determinations.

Scheme length

Purpose: the period over which key incentive scheme inputs are set, including the ESO's Delivery Schedule, performance measures and cost benchmark.

Benefits: setting the appropriate scheme length will ensure consistency between the incentive scheme and the ESO's Business Plan aims and will minimise burden.

Final Determination

Policy	Final Determination	Draft Determination	Applicable period
Scheme length	Align with the Business Plan cycle (which for BP1, is two years)	Same as Final Determination	RIIO-2
Timing of decisions on payments or penalties	Made at the end of scheme period (i.e. revenue will not be banked during the two years)	Same as Final Determination	

Final Determination rationale and Draft Determination responses

2.21 Most respondents agreed with aligning the incentives scheme with the Business Plan period. Some stakeholders noted that this must not detract from the ESO being incentivised to look beyond the two-year period for BP1. We agree with this principle. We believe the scheme ensures this by incentivising the delivery of a two-year plan which, in many places, is laying critical foundations towards the ESO's longer term objectives. We discuss further how we incentivise long term outcomes in the section on evaluation criteria below.

2.22 The ESO did not agree that a payment or penalty should be determined every two years. It considered that at least 40% of the total incentive reward should be "banked" after year 1. It considered a two-year decision weakened the relationship between its performance and its reward because it risked performance across the whole period not being properly considered. The ESO believes the success of the incentive scheme depends on Ofgem and the Performance Panel committing to give clear feedback to the ESO at regular intervals and ensuring that there is a shared understanding of how the ESO is performing.

2.23 Other stakeholders had mixed views on the topic of banking. Several agreed with our proposals, with one noting that the ESO should only be rewarded for actual delivered outputs. Others, including the ESO RIIO-2 Stakeholder Group (ERSG), felt some degree of banking was needed to promote transparency and predictability around the ESO's performance.

2.24 We have considered the ESO's arguments carefully but consider the downsides of revenue being banked after one year outweigh the benefits. Banking would in effect split the scheme into two schemes. The ESO's own Business Plan, and our review of the ESO's Delivery Schedule and costs have focussed on the two-year period over BP1. Many of the activities in the delivery plan are new, multi-year undertakings, and the overall standard of delivery is likely to be much clearer at year two than year one. We therefore think banking is less likely to align rewards/penalties with the ESO's overall performance delivering its Business Plan.

2.25 We note the desire from many stakeholders for the ESO to have a long-term focus. Splitting the scheme into two, one-year, periods undermines this objective. It could encourage the ESO to adjust its behaviour to meet year one targets rather than seeking the optimal delivery strategy for the Business Plan. We also note the ESO's feedback to us on another question where it stated that it should ultimately be measured on the output delivered, rather than smaller milestones.

2.26 We agree with the ESO's comments that the success of the scheme relies on a shared understanding of performance. We believe many of the benefits of banking would be realised by discussing the ESO's projected financial performance at more regular intervals. We recognise concerns with only providing an Ofgem view at the two-year stage, so we have decided to make this clear to the ESO every 6 months (see section on timing and format of scheme evaluations). This should help improve revenue certainty and address any real or perceived risk of near-term bias to incentive decisions.

2.27 The ESO also raised difficulties forecasting incentive performance and the issues this created for setting Balancing Services Use of System (BSUoS) charges, as well as potential problems getting auditors to sign off its statutory accounts. We do not consider a two-year scheme will create any financing concerns. We expect the ESO to be able to forecast its performance to a reasonable degree of accuracy given our feedback every six months. Our financing proposals also mean the ESO has adequate access to credit facilities to manage any deviations. Equally, clear six-monthly feedback should enable the ESO to justify annual accounts.

ESO Performance Panel

Purpose: the Performance Panel plays an important role in the incentives scheme. It is currently composed of a mix of independent experts and industry trade associations, and for RIIO-1, is chaired by Ofgem.

Benefits: factoring more external perspectives into the performance evaluation process helps to provide a comprehensive and accurate view of the ESO's performance.

Final Determinations

Policy	Final Determination	Draft Determination	Applicable period
Role of Performance Panel	Consistent with the Performance Panel's role for the 2018-21 scheme.	Same as Final Determination	RIIO-2
Performance Panel chair	Move to an independent (non-Ofgem) chair in time for the first six-monthly performance evaluation in November 2021	Ofgem chair	
Role of Performance Panel chair	Chair will engage with Ofgem as Ofgem decides the final financial outcome.	n/a	

2.28 We will set out more details on the precise role of the independent Performance Panel chair, its interaction with Ofgem and the process for appointing this chair next year.

Final Determination rationale and Draft Determination responses

2.29 Respondents did not suggest any changes to the Performance Panel's current responsibilities. However, the ESO expressed a concern that the Performance Panel is not sufficiently independent of Ofgem as Ofgem is both the chair and secretariat. The ESO proposed that there should be an independent chair, who should provide input to, and be engaged in, Ofgem's process to determine the final incentive outcome.

2.30 We have considered the ESO's feedback and agree that this would be beneficial. We previously signalled our intention to transition to an independent chair once the Performance Panel was sufficiently established, which we believe it now is.[7]

[7] See our decision on ESO incentives from April 2018, page 30: https://www.ofgem.gov.uk/system/files/docs/2018/02/policy_decision_on_electricity_system_operator_regulatory_and_incentives_framework_from_april_2018.pdf

We believe engaging the Performance Panel chair as part of the incentives decisions will help build additional transparency and confidence in the scheme (although we note that the final decision must legally rest with Ofgem).

Timing and format of scheme evaluations

Purpose: the Performance Panel provides feedback on ESO's performance through within scheme evaluations. We run a call for evidence and hold stakeholder events to enable us and the panel to consider a range of industry views as part of the evaluations.

Benefits: ensures there is clarity on areas of performance that are less easy to define through ex ante metrics. This enables the ESO to course-correct when necessary.

Final Determinations

Policy	Final Determination	Draft Determination	Applicable period
Frequency of call for evidence on ESO performance	Every 6 months	Every 12 months	RIIO-2
Frequency of stakeholder events	Every 12 months	Same as Final Determination	
Frequency of Performance Panel feedback	Evaluation and scoring every 6 months	Targeted feedback every 6 months, evaluation and scoring every 12 months	
Presentation of scores in Performance Panel report	The Performance Panel's reports will present one score for each Role. This would be the majority score given by panel members.	Same as Final Determination	
Frequency of Ofgem view on expected financial outcome	Every 6 months	End of scheme	

2.31

2.32 Table 3 summarises the feedback and evaluation process at each scheme stage, including the roles of the Performance Panel and Ofgem.

Table 3: Key stages of feedback to the ESO

Prior to the scheme start[8]	Comments on the quality, ambition, and value for money of the draft Business Plan. Also reviews our proposals on Delivery Schedule grading and performance measures.	Reviews the Business Plan and engages with the ESO, stakeholders and the Performance Panel to make determinations on the Business Plan.
After 6, 12 and 18 months	Evaluates the ESO's performance and provides scores for each role, including the reasons for these scores. This will include any views on what the ESO needs to do to improve scores before the next review period.	Runs a stakeholder call for evidence (and facilitates an event after 12 months). Briefs the Performance Panel on its findings from ongoing performance monitoring. After receiving the Performance Panel's report, provides the ESO with a view on the panel's conclusions and a projected financial outcome.
At the end of the scheme	Performs a final evaluation of the ESO's the performance and provides scores for each role. The Performance Panel chair will provide us with their views on translating scores into a financial outcome.	Reviews the final Performance Panel report and forms its view on the appropriate reward or penalty. Engages with the Performance Panel chair as part of this process.

Final Determination rationale and Draft Determination responses

2.33 Most respondents agreed with our proposals in this area. However, a number expressed some concern about removing the current six-monthly stakeholder call for evidence. They considered it was important there are transparent and formal mechanisms for stakeholders to input to the scheme. The ESO also said it valued the six-monthly call for evidence. Two respondents felt that a six-monthly call for evidence was too resource intensive and could result in stakeholder fatigue, with one respondent suggesting a lighter touch process involving a survey. We have decided to retain a six-monthly call for evidence, given the feedback that these are valuable to stakeholders. However, we will explore ways to make this as simple for stakeholders to contribute to as possible (for example, by streamlining this with the new ESO stakeholder satisfaction survey, discussed in Chapter 3).

2.34 The ESO expressed a preference for six-monthly scores rather than targeted feedback. The ESO considered this provides useful context to the feedback and helps it to forecast incentive performance. The ESO also felt that there was still substantial reporting required at the six-month stage, so the proposal to provide

[8] For BP1 the Business Plan review was carried out by the RIIO-2 CG and ERSG. We subsequently engaged with the panel on our Draft Determinations on the Delivery Schedule and Performance Metrics.

targeted feedback did not save burden in practice. We recognise the value of the regular and clear feedback to the ESO and have therefore decided to adopt six-monthly scoring. Upon further consideration, we consider the additional burden created by this should be manageable, and that it would not create too much extra delay in providing feedback to the ESO.

2.35 For the reasons set out in the section on scheme length above, we have also decided to communicate to the ESO what we expect its projected two-year financial incentive outcome will be, every six months, rather than waiting until the end of the scheme. This will help the ESO to forecast its financial performance and will minimise the scope for misaligned expectations.

Evaluation criteria

Purpose: used by the Performance Panel and Ofgem to assess the ESO's performance.

Benefits: clear criteria, that capture all the key factors that are relevant to the assessment of the ESO's performance, will create incentives on the ESO to maximise consumer outcomes.

Final Determination

Policy	Final Determination	Draft Determination	Applicable period
Evaluation Criteria	Five criteria: a) Plan delivery b) Metric performance[9] c) Stakeholder evidence d) Demonstration of plan benefits e) Value for Money	Same as Final Determination	RIIO-2
Scoring approach	Scoring from 1-5 with adapted guidance to help ensure the full range of scores is achievable.	Scoring from 1-5, where: 1 = did not meet any criteria. 2 = mostly did not meet the criteria. 3 = met at least the majority of criteria but did not exceed against many. 4 = mostly exceeded the criteria. 5 = exceeded all criteria.	

[9] Criteria b) is n/a to Role 3 given the lack of Performance Metrics for this role.

2.36 We will confirm the detailed guidance for the evaluation criteria and scoring approach when we make a final decision on the ESORI Arrangements Guidance next year.

Final Determination rationale and Draft Determination responses

Evaluation criteria

2.37 Most respondents, including the ESO, either agreed in principle with the evaluation criteria or did not have specific suggestions on alternative criteria to use.

2.38 We still consider these criteria capture the key relevant considerations for measuring the ESO's performance during RIIO-2, and we have decided to take them forward for the reasons described in our Draft Determinations. In particular, we believe the addition of a Value for Money (VfM) criteria for RIIO-2 is a proportionate way to motivate the ESO to maximise the impact it can deliver with its expenditure. This will also limit the probability of us needing to call on our backstop power to disallow demonstrably inefficient and wasteful expenditure.

2.39 The ESO provided detailed comments on our suggested drafting of the guidance for the evaluation criteria, including:

- guidance on criteria (b) could more explicitly say that the ESO can still meet or exceed expectations if its performance against a Performance Metric is below or meets expectations but there are good reasons for this
- criteria (c) should enable the ESO's explanation of the feedback its receives to be considered
- the value for money criteria should allow a holistic assessment to be made of what has been delivered for the money which has been spent, and the exceeds guidance should refer to cost increases being supported by the delivery of beneficial outputs
- activities funded through innovation allowances should not be excluded from consideration.

2.40 We will further consider these comments as part of the consultation process on the ESORI Arrangements Guidance. In principle, we agree that the assessment against criteria (b) should consider mitigating factors; that the ESO's narrative on stakeholder satisfaction can be considered under criteria (c); that the ESO can still exceed expectations if expenditure above the cost benchmark is justified by

beneficial outputs; and that innovation funded projects should be considered in the scheme. We will work with the ESO on precise drafting, noting that including more evaluative elements into the drafting may involve a trade-off with the ESO's requests for ex ante certainty.

2.41 We do not intend to apply explicit weighting to the criteria, as suggested by the ESO and another stakeholder. All the criteria are important and are weighted equally as a default, but as they interact, they must be considered holistically to understand the ESO's performance. Fixing % weights for the criteria would risk focussing the ESO's attention on beating discrete targets rather than remaining agile and striving to do what is best for consumers overall.

2.42 One respondent suggested that failure to deliver a Delivery Schedule should be below expectations, regardless of the level of ambition. We do not consider that any failure to deliver all components of a Delivery Schedule should be automatically considered as below expectations. We want the ESO to develop ambitious plans and note that plans that are more ambitious may carry a higher risk of failure. We consider that both the original ambition of the Delivery Schedule, and the extent to which it is delivered are important factors to consider when determining performance.

2.43 Another stakeholder suggested that the evaluation criteria could be clearer and that there should be detailed guidance on the controllability and evidence thresholds relative to the criteria. We are unclear what specific changes might be needed to our guidance to achieve this, but we welcome further detailed views on the drafting as part of the ESORI Arrangements Guidance consultation.

Scoring guidance

The ESO and another stakeholder considered the guidance on 1-5 scores could make the top and bottom of the range too hard to achieve, and suggested edits. We agree that the full incentive range should be achievable, and we proposed changes to the drafting in this area in our informal consultation on the ESORI Arrangements Guidance in September. We will review any further feedback on this drafting as part of the next ESORI Arrangements Guidance consultation.

General comments on incentives

2.44 Other respondents had general comments on the incentives. These included that:

- the scheme needs to ensure the ESO has the right incentives to focus on long-term, whole system benefits
- there should be greater consideration of how future benefits can be robustly measured, including a clearer linkage between the ESO's achievement of the Business Plan's expected £2bn of benefits and its incentives reward.

2.45 We agree that the ESO's incentives need to drive them towards realising long term, whole system benefits. The evaluation criteria directly relate to the pace and quality of the delivery of ESO's Business Plan, which should align to the ESO's medium-term strategy, which is in turn shaped by the ESO's long-term vision for the energy system. There should, therefore, be a 'golden thread' between the short-term delivery of the plan and progress towards realising long term benefits. We have designed our evaluative criteria to accommodate and encourage flexibility and adaptability from the ESO in reaching its long-term strategic goals. We recognise the need to ensure individual performance measures align with the ESO's strategic goals, and we discuss this further in Chapter 3.

2.46 We do not believe it is feasible to base the incentive rewards/penalties predominantly on the delivery of a forecast long-term economic benefit. This is due to the broad assumptions underpinning the ESO's Business Plan Cost Benefit Analysis (CBA), the lack of a transparent and credible modelled counterfactual for measuring outturn benefits and the significant influence on these numbers from external factors. We believe the use of evaluative incentives is the most credible 'second best' solution in the absence of a single, long term counterfactual of the economic and environmental benefits that would materialise in the absence of the ESO's Business Plan measures.

Decisions on rewards or penalties

Purpose: we review the Performance Panel's recommendation to make a final decision on the payment or penalty for the ESO, in line with a methodology set out in our ESORI Arrangements Guidance document.

Benefits: transparency in the decision-making process helps to build confidence in the scheme, driving better ESO performance.

Final Determination

Policy	Final Determination	Draft Determination	Applicable period
Payment/penalty methodology	Methodology for determining a payment or penalty will remain broadly the same as RIIO-1, but with changes so that the grading of the ESO's Delivery Schedule is a factor that is considered more explicitly as part of the final incentives decision.	Same as Final Determination	RIIO-2
Disputes on incentives decisions	Do not introduce a new dispute process involving an independent arbitrator. Instead, introduce an extra step in the decision process to provide the ESO with visibility of the recommended £m decision before it is final.	n/a	

Final Determination rationale and Draft Determination responses

2.47 The ESO argued in its response that Ofgem has too much discretion in deviating from the recommendations of the Performance Panel. The ESO suggested that a dispute resolution process, whereby the financial outcome determined by Ofgem can be referred to an agreed independent arbitrator, was needed to build confidence in the scheme. However, it did not provide any detailed proposal.

2.48 We note that Ofgem is the legal decision-making body on the ESO's incentives and the Performance Panel's role is to make a recommendation to us. Currently, the ESO can challenge our decision on incentive payments/penalties by way of judicial review. We do not consider it is practical at this stage to introduce an alternative route for dispute settlement. We are not sure what benefit it would add, particularly as the ESO has not provided any details for how this process would work.

2.49 We recognise the need for transparency over how we reach our decisions, particularly where this deviates from the Performance Panel's view. We currently provide this through the ESORI Arrangements Guidance payment-penalty methodology and through our decision letters. We believe it would be beneficial to introduce an additional step in the process to provide the ESO with the ability to discuss our recommended reward or penalty before we make and publish our final decision. The ESO has expressed its support for this measure.

Scheme value

Total value

Purpose: the value of the upside and downside of ESO's incentives scheme.

Benefits: setting the right incentive value will motivate the ESO to maximise benefits for consumers.

Final Determination

Parameter	Final Determination	Draft determination	Applicable period
Max upside (£m nominal, 2 years)	30	30	RIIO-2
Max downside (£m nominal, 2 years)	-12	-12	
Max RORE[10] (annual)	19%	16%	n/a
Min RORE (annual)	3%	1%	

2.50 These values will be nominal and fixed. The decision will apply to the whole RIIO-2 period (subject to any future decisions to alter the length of Business Plans).

Final Determination rationale and Draft Determination responses

2.51 Most respondents agreed with our proposals and rationale. There was unanimous support for an asymmetric upside incentive scheme that retains some downside. Respondents agreed that this should encourage ambition and address the issue of loss aversion bias. They also agreed it is important to set the downside at a level that is appropriate for the ESO's size and supported our approach of linking this to the cost of equity.

2.52 The ESO cautiously welcomed our proposals. However, it noted that its experience of the scheme to date suggests that it is hard to achieve anything other than the mid-point of the incentive range. They believed if this continued the scheme would provide weak motivation. One respondent felt that the values were generous if

[10] Based on +£15m and -£6m annual values, including forecast returns on equity, but not including additional funding (see paragraph 5.28). Please note this value has increased not because of our decisions on incentive values but due to our decision to increase the allowed return on equity for the ESO (see paragraph 5.8).

achievable, but also questioned whether the full values were achievable given the evaluative nature of the scheme. Two respondents considered that the upside value was too low and that it should be at least as high as RIIO-1 to create a stronger incentive than to date, particularly given the level of consumer value available through the ESO's actions.

2.53 We recognise the substantial consumer benefits that the ESO can unlock. However, we do not consider that an incentive upside greater than £15m would create any additional improvements in ESO performance or net benefits for consumers.

2.54 A key difference between the ESO's RIIO-1 and RIIO-2 frameworks is the removal of the Totex Incentive Mechanism. Under the current framework, the ESO faces a trade-off when deciding how much effort, resource and capital to invest in consumer benefitting activities. In RIIO-1, for every pound spent above baseline allowances, the ESO incurs 47% of this expenditure. In RIIO-2, our cost-pass through model removes this explicit trade-off. That will mean the investment cost to the ESO of trying to outperform its incentives scheme will reduce substantially. We consider that this means that every £m of incentive upside will have a much greater relative impact than under RIIO-1.

2.55 We consider that the ESO's scores during RIIO-1 are reflective of its performance and the level of investment in resources and systems it has been willing to make. We also believe our measures elsewhere will boost confidence and predictability in the scheme, which will further increase the scope for maximum scores. We are therefore confident that the upside value is sufficient. We also note that our final grading of the ESO's Delivery Schedule (discussed in Chapter 3) implies that if the ESO achieves demonstrable progress on the outcomes set out in its Business Plan, then this would deliver an incentive reward above the mid-point of the incentive range.

2.56 Our decision on the upside value notes the relative significance of this to a standalone ESO. When considered in combination with expected weighted average cost of capital (WACC) returns, this produces a total Return on Regulatory Equity (RoRE) range of 3%-19% (which does not include additional funding - see paragraph 5.28). We believe this is the appropriate maximum levels of notional return for the ESO.

2.57 The ESO noted that the incentive downside should take account of financeability considerations for the ESO. It argued that it has very little equity buffer and cannot afford to incur losses greater than £4m per year. As discussed in Chapter 5, we find that our package of Final Determinations allows the ESO to efficiently finance its activities.

2.58 Our estimate of the ESO's cost of equity has increased since the Draft Determination. Whilst we considered the case for increasing the downside as a result, we did not believe this would be in consumers' interests. We want to retain a strong asymmetric upside incentive. An asymmetric upside scheme recognises that the price control is relatively novel and there may be some uncertainty in how it is implemented. This will mean the ESO has more to potentially gain than lose from stretching itself in more novel areas. We consider this is a beneficial incentive to create at this point in time when we need the ESO to be proactive and ambitious to facilitate Net Zero.

2.59 Our reason for continuing with a nominal, fixed incentive value (as was the case in RIIO-1) is to avoid introducing undue complexity. This recognises that while our proposed incentive values have been informed by other financial values, there is not a mechanistic link between them. We consider our proposed values are suitable across the five-year period.

2.60 Overall, we believe our proposals will have a net positive impact on consumers. The potential costs of payments to and/or from the ESO will be significantly outweighed by positive changes in the ESO's behaviour which has the potential to impact £billions of wider energy system costs (estimated by the ESO to be £2bn over the course of RIIO-2). For example, it would take about a 1% annual reduction in balancing costs to outweigh the total incentive upside.

Allocation per Role

Purpose: as the incentive evaluation is carried out per Role we need to determine which proportion of the total value applies to each Role.

Benefits: setting the right allocation per Role will help ensure the ESO focuses its effort in the right areas.

Final Determination

Role allocation	**Role 1**	**Role 2**	**Role 3**	**Role 1/2/3**	
Allocation	1/3	1/3	1/3	Same as Final Determination	RIIO-2
Max scheme upside (£m)	10	10	10		
Max scheme downside (£m)	-4	-4	-4		

Final Determination rationale and Draft Determination responses

2.61 We have decided on balanced values for each Role, noting the lack of stakeholder support for unbalanced values. We believe each Role is important and has considerable benefits associated with it. There is no strong evidence to suggest strong or poor performance in one Role is relatively more or less important than another.

3. Outputs

Introduction

3.1 This chapter sets out our final set of outputs for the ESO, following our review of its RIIO-2 Business Plan and stakeholder responses to our Draft Determinations.

3.2 Table 4 sets our key decisions on the ESO's outputs, including whether they apply to the whole RIIO-2 period or just to the first Business Plan period (BP1). We discuss each aspect in more detail in the sections that follow.

Table 4: ESO outputs

Licence obligations	Update the licence to include minimum standards associated with the ESO's RIIO-2 Business Plan activities.	Same as Final Determination	Ongoing
ESO Roles Guidance	Update guidance to align with the ESO's Business Plan activities more closely. Also set out how the ESO can 'exceed' expectations for each activity so that the ESO has clarity on the outputs it should deliver, particularly where its plan is not sufficiently ambitious. The ESO Roles Guidance will be updated within RIIO-2 if necessary, to reflect significant new developments in the ESO's activities.	Same as Final Determination	RIIO-2
ESO Delivery Schedule	Ambition grading: Role 1: 5/5 Role 2: 4/5 Role 3: 4/5	Ambition grading: Role 1: 3/5 Role 2: 3/5 Role 3: 2/5	BP1
Performance Metrics	Metrics on balancing costs, demand forecasting, wind generation forecasting, outage management and competitive procurement.	In addition to the Final Determination package, we also proposed a security of supply metric.	BP1
Stakeholder satisfaction	Role based surveys developed by an independent, reputable survey company and approved by Ofgem.	Same as Final Determination	RIIO-2
Regularly Reported Evidence	Requirements on the ESO to report on specific information relevant to the successful delivery of the Business Plan's aims and benefits. This covers areas which are not well captured through Performance Metrics or stakeholder satisfaction surveys.	A similar package of measures to the Final Determination, but with differences in a few areas, which are detailed within this chapter.	BP1

Licence obligations

Purpose: sets out the minimum requirements and standards the ESO must achieve with its price control funding.

Benefits: ensures there is clarity on the minimum requirements and standards we expect the ESO to achieve and provides us with the ability to hold the ESO to account when it does not meet these standards.

Final Determination

Policy	Final Determination	Draft Determination	Applicable timeframe
Requirements for an efficient, coordinated and economic ESO	Update the licence to include minimum standards associated with the ESO's RIIO-2 Business Plan activities in a new, standalone condition.	Same as Final Determination	Ongoing

Final Determination rationale and Draft Determination responses

3.3 All of the responses we received in this area thought our proposals captured the full scope of minimum obligations/standards associated with the ESO's Business Plan activities. In particular, a number of stakeholders supported placing licence obligations on the ESO related to whole system coordination and its facilitation of a transition to a zero-carbon energy system.

3.4 As most stakeholders agreed with our Draft Determination proposals, we are retaining these for Final Determinations. We consider they will create transparency on the minimum expectations we have for the ESO's delivery of its Business Plan activities. A new condition which is focussed on minimum standards across the ESO's different roles will also help streamline the licence.

3.5 We received some detailed feedback on the wording of these licence obligations in response our informal RIIO-2 licence change consultation in September 2020. We will shortly set out our proposed detailed drafting for these conditions as part of our statutory consultation on RIIO-2 licence changes.

ESO Roles Guidance

Purpose: describes and groups the ESO's key roles and activities and sets out our expectations for these activities. This includes how the ESO should meet both its licence obligations and our performance expectations in the incentives framework.

Benefits: aligns expectations between Ofgem, the ESO and stakeholders on what is required from the ESO to meet its licence obligations and perform well in the incentives. This helps to drive better ESO performance.

Final Determination

Policy	Final Determination	Draft Determination	Applicable timeframe
Structure of activities	Restructure expectations to align with the ESO's Business Plan activities, as outlined in Table 5.	Same as Final Determination	RIIO-2
Types of expectations	Incorporate expanded guidance on how the ESO can 'exceed' our baseline expectations for each of these activities.		
Change process	Retain the ability to change the Roles Guidance, following consultation, if the ESO's roles or our expectations change within the RIIO-2 period.		

Table 5: Activities associated with each role

Role 1: Control centre operations	a) System operation
	b) System restoration
	c) Information, data and forecasting
Role 2: Market development and transactions	a) Market design
	b) EMR
	c) Industry codes and charging
Role 3: System insight, planning and network development	a) Connections and network access
	b) Strategy and Insight
	c) Long term network planning

3.6 In response to our informal licence change consultation in September we have received suggestions for changes to the drafting of the ESO Roles Guidance. We will consult further on our updated ESO Roles Guidance alongside our RIIO-2 statutory licence change consultation in December this year.

Final Determination rationale and Draft Determination responses

3.7 All respondents to this topic supported our proposals. We believe they will provide further clarity to the ESO on what it needs to deliver within BP1. The ESO Roles Guidance will also provide guidance on what the ESO should seek to achieve with its second Business Plan from April 2023 (BP2).

3.8 Since the Draft Determinations, the ESO has stated its view that we should be able to adapt the ESO Roles Guidance within the price control. This is due to the uncertainty in the energy sector and factors outside of its control that might merit changes to expectations. We anticipate that the ESO Roles Guidance should provide a stable, consistent set of expectations for RIIO-2 and provide a resource for the ESO to draw on in shaping BP2. At the same time, we recognise the rapid pace of change in the sector, and we know of some potentially changing or expanded roles for the ESO. For this reason, we agree that we should maintain the ability to refine the Roles Guidance during RIIO-2.

ESO Delivery Schedule

Delivery Schedule grading

Purpose: the ESO's Delivery Schedule sets out the key deliverables, milestones and success measures under its two-year Business Plan. We have graded the ambition of the Delivery Schedule for each ESO Role.

Benefits: grading the Delivery Schedule will provide the ESO with clarity on how ambitious we believe its plans are. It should also provide the ESO with an informed view of how plan delivery links to incentive performance.

Final Determination

		Role 1	**Role 2**	**Role 3**	**Role 1**	**Role 2**	**Role 3**	
RIIO-2 aims	Ambition (1-5)	5	4	4	5	4	3	BP1
Delivery Schedule	Minimum requirements met (Yes / No)	Yes	Yes	Yes	No	No	No	
	Ambition (1-5)	5	4	4	3	3	2	

3.9 Full details, including the methodology we have used, and our assessment of individual activities, are contained in Appendix 1.

3.10 Our expectations for each activity will be published in our ESO Roles Guidance document. This document, combined with the messages in Appendix 1, will help create clarity for the ESO on how it can exceed our expectations in those areas where we have indicated its Delivery Schedule could be more ambitious.

3.11 This grading is based on the ESO's current roles and responsibilities. As highlighted in Chapter 7, there is the possibility that there may be material changes to the ESO responsibilities in Role 3 within BP1. In this case, we would update our expectations, request the ESO to submit an updated Delivery Schedule for this Role and re-grade the Role accordingly.

Final Determination rationale and Draft Determination responses

3.12 The ESO responded in detail to our grading of the Delivery Schedule.[11] An overarching summary of its comments is:

- for Role 1, the ESO generally welcomed our assessment and acknowledged the need for greater detail on the outputs and outcomes for BP1. It noted that its agile investment programme meant detailed milestones and functionality would only be available on a rolling basis.
- for Role 2, the ESO welcomed most areas of our assessment, and committed to providing more information. However, it noted that achieving alignment between transmission and distribution markets is not fully within its control.
- for Role 3, the ESO was disappointed with our assessment, particularly for activity 3c (Long Term Network planning) which it considered as very ambitious given the unprecedented breadth and complexity of the work. The ESO believed Role 3 made a key contribution to its overall ambitions for zero-carbon operation and competition everywhere. However, the ESO recognised that it could have more clearly explained how the individual elements come together to form a coherent set of overall proposals.

3.13 The ESO made a cross-cutting point that many of its deliverables are new, first-of-a-kind activities. The ESO considered it will not always be able to define exactly what will be delivered, by when and how success will be measured, as this may

[11] See Draft Determinations response, NG ESO response - Full Response and Annex 2: https://www.ofgem.gov.uk/publications-and-updates/riio-2-draft-determinations-transmission-gas-distribution-and-electricity-system-operator

evolve over time in response to detailed analytical work and stakeholder feedback. We discuss the ESO's key comments further in Appendix 1.

3.14 Six respondents, including the RIIO-2 CG, commented on our grading. We also discussed the draft grading with the ESO Performance Panel. These groups generally agreed with our initial assessment, including the need for the ESO to make a clearer link between the RIIO-2 aims and two-year deliverables. However, the Performance Panel and another respondent noted that being overly specific could be a challenge for the ESO given the pace of change in the electricity sector. Stakeholders and the Performance Panel also provided detailed comments on what the ESO should achieve during BP1, which we have factored into our final assessment. The Performance Panel additionally commented that our assessment methodology could make it difficult for the ESO to achieve a 1 or 5. We have reflected on this feedback and updated the methodology used for our final assessment, as highlighted in Appendix 1.

3.15 Since the Draft Determinations, we have engaged with the ESO to discuss its Delivery Schedule and our assessment. These discussions were productive, and in several cases, we were able to reach a common understanding on how the ESO could provide us with sufficient information to judge the ambition of the Business Plan where the detailed solutions and milestones are still to be defined.

3.16 The ESO submitted its final Delivery Schedule to us on 9 October 2020. We have assessed the final Delivery Schedule and we are satisfied that it has now met our minimum requirements for all Roles. As a result, we now have a better understanding of the link between the RIIO-2 aims and the Delivery Schedule. We are now more confident that the ESO's actions across the first two years will make progress against its RIIO-2 aims, assuming these activities are delivered to a high standard. As a result, we have increased our grading of the ambition of the Delivery Schedule to a 5 for Role 1, and to a 4 for Role 2, to match the grading of the five-year aims.

3.17 For Role 3, the ESO submitted further information about its aims and how they contribute to its overall strategic goals, as well as a further articulation of the outputs and outcomes for BP1. As a result, we now expect the activities for Role 3 to at least meet our expectations and in several areas to exceed them. We have graded the ambition of the Role's RIIO-2 aims and Delivery Schedule a 4. However, we believe this Role would benefit from the ESO providing a clear future vision and strategy for an optimal network assessment process (or suite of

integrated and harmonised processes) capable of addressing zero-carbon system operability challenges. Moreover, there are areas where the ESO could better demonstrate it is going beyond incremental improvements from RIIO-1. This includes the ESO showing how constituent parts of its Role 3 plan (such as the Network Options Assessment (NOA) or the NOA pathfinders) will come together to deliver a step change in the overall network planning process by the end of RIIO-2. We note that Role 3 is an area where the ESO's role may further expand during BP1 and we encourage the ESO to ensure any future responsibilities are integrated within a strong overall vision for network development.

3.18 More detail on our rationale is in Appendix 1.

Delivery Schedule reporting

Purpose: the ESO provides updates on its progress against the Delivery Schedule. These updates, combined with our ambition grading, inform the evaluation against criteria (a) of the incentive scheme.

Benefits: regular reporting on the ESO's progress supports transparency. This helps ensure Ofgem, stakeholders and the Performance Panel understand the reasons for any changes to the ESO's plans, well in advance of the performance evaluation.

Final Determination

Policy	Final Determination	Draft Determination	Applicable timeframe
Regularity of Delivery Schedule reporting	Quarterly	Same as Final Determination	RIIO-2
Dashboard report on zero-carbon ambition	ESO should provide a six-monthly summary of its progress with activities critical to the zero-carbon ambition, but this can deviate from its original Business Plan proposal.	ESO to produce a dashboard report on the delivery of zero-carbon operability ambition, in line with its Business Plan proposal.	

Final Determination rationale and Draft Determination responses

3.19 The ESO suggested that progress on plan delivery could be updated every six months rather than every quarter to reduce burden. We believe that it is important there is ongoing transparency and communication around the ESO's progress with its deliverables. With our move to six-monthly scoring, we believe it

is important the Performance Panel and ourselves are given an early indication of any significant changes to major deliverables. This will support the evaluation process and avoid excessive questions at the six-month point.

3.20 The ESO believed our proposals for a dashboard report on its zero-carbon ambition would not be needed, as this information would already be included in its plan delivery reporting. It suggested the executive summary of major reports could state how it is progressing towards each of its ambitions. We note the proposal for a dashboard was originally developed by the ESO. Given the importance of the zero-carbon ambition to stakeholders, we think it is important that the ESO explicitly addresses its progress on this aim, with reference to the key activities that underpin it. However, we are happy to leave the precise approach to the ESO's discretion.

Performance Metrics

Purpose: numeric measures that enable us, stakeholders, and the Performance Panel to regularly track the ESO's performance delivering its Business Plan outcomes. They have clear ex ante performance benchmarks for below/meets/exceeds expectations. They inform the evaluation against criteria (b) of the incentive scheme.

Benefits: tracks the quality of the ESO's actions under its Business Plan and creates clarity on performance expectations, helping to drive improved consumer outcomes.

Final Determination

Performance Metrics	Final Determination on the methodology and performance benchmarks		Draft Determination
Role 1			
1A. Balancing costs	Measures the ESO's outturn balancing cost expenditure versus a cost benchmark (including Black Start costs). Methodology includes a starting benchmark calculated from historical balancing costs; ax-ante benchmark adjustments set by Ofgem on an annual basis; and an ex-post benchmark adjustment according to wind conditions each month. Further details in Appendix 2.		Consistent with Final Determination, but with less detail on the methodology.
	Exceeds	10% lower than meets benchmark.	
	Meets	Defined prior to start of RIIO-2, following further consultation on the detailed inputs to the methodology and reflecting outturn data up until March 2021.	
	Below	10% higher than meets benchmark	

Performance Metrics	Final Determination on the methodology and performance benchmarks		Draft Determination
1B. Demand forecasting	Measures the average absolute % error between forecast and outturn day-ahead demand for each half hour period. The benchmarks are drawn from analysis of historical errors, considering average Winter (November to March) and Summer (April to October) performance, and applying a smoothing over the two-month ramp period either side of Summer. 5% improvement in performance from the ESO expected each year, with range of +/-0.2% used to set the benchmark for meeting expectations. We have outlined indicative benchmarks below but intend to review the suitability of these based on outturn forecasting data after March 2020.		Consistent with Final Determination, although we did not indicate our intention to make use of outturn data after March 2020.
	Exceeds	Year 1: < 3.10% Year 2: < 2.94%	
	Meets	Year 1: 3.10-3.50% Year 2: 2.94-3.34%	
	Below	Year 1: > 3.50% Year 2: > 3.34%	
1C. Wind generation forecasting	Measures the average absolute % error between forecast and outturn day-ahead wind generation for each half hour period. Aspects such as the period of historic data used to define targets and the annual improvement expected from the ESO to be defined through further consultation.		Apply the same methodology as demand forecasting.
	Exceeds	Defined prior to start of RIIO-2 following further consultation on the detailed inputs to the methodology, reflecting the latest available forecasting data.	
	Meets		
	Below		
Security of Supply	n/a – no longer a Performance Metric		Performance metric on number of frequency excursions per year.
1D. Short notice changes to planned outages	Measures the number of planned outages delayed by more than an hour or cancelled in the control phase (within day) due to process failure, per 1,000 outages.		Same as Final Determination
	Exceeds	Year 1: <1 Year 2: <1	
	Meets	Year 1: 1 to 2.5 Year 2: 1 to 2.5	
	Below	Year 1: >2.5 Year 2: >2.5	

<table>
<tr><th>Performance Metrics</th><th colspan="2">Final Determination on the methodology and performance benchmarks</th><th>Draft Determination</th></tr>
<tr><td colspan="4">Role 2</td></tr>
<tr><td rowspan="4">2A. Competitive procurement</td><td colspan="2">Measures the overall % of services procured through competitive means (auctions and tenders) calculated by £ expenditure. [12]</td><td rowspan="4">Same as Final Determination</td></tr>
<tr><td>Exceeds</td><td>Year 1: >60%
Year 2: >75%</td></tr>
<tr><td>Meets</td><td>Year 1: 50-60%
Year 2: 65-75%</td></tr>
<tr><td>Below</td><td>Year 1: <50%
Year 2: <65%</td></tr>
<tr><td colspan="4">Role 3</td></tr>
<tr><td colspan="4">n/a</td></tr>
</table>

3.21 These decisions all apply to BP1. Full details for each decision is contained in Appendix 2. The ESO will report on each of these metrics monthly, except for the Performance Metric 2A, which it will update every quarter. The ESO will also provide supporting narrative in its reporting to explain its performance against the benchmarks.

3.22 We will consult further on the detailed inputs to our methodologies for Performance Metrics 1A and 1C, through our consultation on the ESORI Arrangement Guidance and we will make a final decision on these prior to the start of RIIO-2. We will also confirm the final benchmarks for Performance Metric 1B when we publish the final ESORI Arrangements Guidance document next year.

Final Determination rationale and Draft Determination responses

3.23 Most respondents supported our proposed package of metrics. Our responses to specific comments on each Performance Metric are in Appendix 2.

3.24 The ESO generally felt we had selected the right metrics to measure its performance. However, it did not agree there should be a Performance Metric on wind generation forecasting, as it believes it has limited ability to improve wind generation forecasts. The ESO also disagreed with our methodologies for demand forecasting and security of supply and it raised a point of caution on our

[12] We have provided benchmarks for 2021/22 to help facilitate the within-scheme evaluation stages, but note that as the scheme is two years long, the 2022/23 performance benchmarks will be used for the final incentive evaluation.

methodology for competitive procurement. We discuss our response to these points in Appendix 2.

3.25 Some respondents questioned whether there were enough Performance Metrics in Roles 2 and 3, others suggested that we reclassify some of the Regularly Reported Evidence as metrics (discussed further in Appendix 2). The RIIO-2 CG agreed with the Performance Metrics but noted that these would not necessarily measure the ESO's progress towards its more strategic objectives.

3.26 We have only set Performance Metrics where we believe sufficiently robust numerical benchmarks can be set. Whilst we believe these metrics are relevant to ESO's Business Plan aims, we agree that they do not in isolation measure progress against the ESO's key longer-term goals. A key reason why we consider a range of criteria in the performance evaluation is because we do not think the ESO's long term goals can be robustly measured through numeric targets.

3.27 We note that in some cases a lack of data is available to set robust benchmarks now. We see the potential for some items currently classed as Regularly Reported Evidence to be moved to Performance Metrics for BP2.

3.28 As a result of the uncertainty created by Covid-19 this year, we believe it is pragmatic to allow more time to consider the detailed inputs used to set benchmarks for the balancing cost and forecasting metrics. By reviewing additional months of data during 2020/21, we will be able to better understand how much influence the pandemic has had on balancing costs and ESO forecasting, enabling us to set more appropriate targets.

Stakeholder satisfaction surveys

Purpose: measures the level of stakeholder satisfaction with the ESO's performance in each of its Roles. This informs the evaluation against criteria (c) of the incentive scheme.

Benefits: as the ESO provides vital services to the energy sector, stakeholder satisfaction is a key measure of its performance. Ensuring robust stakeholder surveys will provide greater assurance and confidence in the survey results. This will strengthen their role in the incentive scheme and improve the ESO's ability to track its performance.

Final Determination

Policy	Final Determination	Draft Determination	Applicable timeframe
Stakeholder satisfaction surveys	The ESO will commission six-monthly surveys from an independent, reputable market research company. These surveys will measure stakeholder satisfaction for each ESO role, focusing on the key activities within the role. Key aspects, including the questions, survey method, participants and the performance benchmarks will be approved by Ofgem.	Same as Final Determination	Framework set for RIIO-2. Certain aspects, such as benchmarks, set for BP1.

3.29 In Appendix 3 we provide our current expectations on the key aspects of the survey design. These will be finalised through further discussion with the ESO and its independent market research company.

Final Determination rationale and Draft Determination responses

3.30 Our question received nine responses that were largely supportive of our proposals. The ESO noted that it is happy to work with us to design a single survey to cover overall customer and stakeholder satisfaction, to be carried out by the existing independent provider. However, the ESO noted that it would continue to report additional stakeholder narrative for each role and further information it may collect through other stakeholder feedback.

3.31 We confirm our decision to introduce a new stakeholder survey process to measure stakeholder satisfaction with each of the ESO's Roles, as this was supported by respondents. We will work with the ESO and its independent market research company to finalise the detailed survey design.

Regularly Reported Evidence

Purpose: in its Business Plan, the ESO estimated that it would create £2bn of net benefits for consumers over the RIIO-2 period. The ESO's achievement of these benefits will depend on how good the ESO's delivered outputs are in practice. We are requiring Regularly Reported Evidence on key areas of performance that are relevant to the successful delivery of the Business Plan's aims and benefits. This reporting informs the evaluation against criteria (d) of the incentive scheme.

Benefits: helps ensure a comprehensive performance assessment, by providing transparency on areas of performance which are not well captured through Performance Metrics or satisfaction surveys. This also guides and focuses the ESO's reporting of Business Plan benefits and therefore streamlines the evaluation process.

Final Determination

Regularly Reported Evidence	Final Determinations	Reporting Frequency	Draft Determination
All Roles			
Consumer benefit reporting	ESO to report on its achievement of its Business Plan benefits, in line with its proposals in Annex 7 of its Business Plan.	Six-monthly	Same as Final Determination
Role 1			
1E. Transparency of operational decision making	Measures the percentage of actions taken outside of merit order in the Balancing Mechanism and the ESO's supporting rationale.	Monthly	Same as Final Determination (but originally called 'Skip rates')
1F. System Zero-Carbon Penetration (SZCP) indicator	Measures the maximum amount of zero-carbon generation achievable on the system without compromising system stability. We currently expect this to include the ESO reporting on: i. An indicative SZCP limit for the start and end of BP1 ii. Regular calculation of actual SZCP iii. Annual deep dive on periods with the highest SZCP and the actions taken by the ESO in response	To be defined	We proposed monthly reporting on the 'Volume of renewables constrained' by the ESO.
1G. Carbon impact of ESO operational actions	Calculates the approximate gCO2e/kWh of actions taken by the ESO, considering the proportion of the total CO2 emissions on the system which is a result of ESO actions.	To be defined	n/a
1H. Constraints cost savings from collaboration with network operators	Measures the estimated £m of avoided constraints costs from solutions brought forward through the ESO-TO funding mechanism.	Quarterly	Similar to Final Determination, but with different scope.
1I. Security of supply	Monthly report on instances and reasons for any frequency excursions outside 0.3hz for more than 60 seconds, and voltage excursions outside statutory limits. Annual summary of the ESO's compliance with its frequency control methodology.	Monthly / Annual	Focused just on reporting voltage excursions.
1J. CNI outages	Number and length of planned and unplanned outages to critical national infrastructure (CNI) IT systems.	Quarterly	Focused on all external facing IT systems.

Regularly Reported Evidence	Final Determinations	Reporting Frequency	Draft Determination
Role 2			
2B. Diversity of service providers	Measures the diversity of technologies that provide services to the ESO in each of the services covered by Performance Metric 2A.	Quarterly	Same as Final Determination but with monthly reporting.
2C. EMR decision quality	Number of overturns in the Tier 2 disputes process for the Capacity Market (CM) per 1000 applications.	Annual	Same measure but we proposed different quantitative expectations and to include CfDs.
2D. EMR demand forecasting accuracy	Accuracy of forecasts of peak demand, for EMR T-1 and T-4 CM auctions.	Annual	Same as Final Determination.
2E. Accuracy of forecasts for charging	Accuracy of forecasts used to set industry charges.	To be defined	Accuracy of TNUoS forecasts.
Role 3			
3A. Future benefits from operability solutions	Forecast medium to long term benefits from new operability solutions (including the NOA pathfinder and other operability measures). Includes, where applicable: saved balancing costs; saved infrastructure costs; carbon benefits and any impact on the SZCP limit.	Six-monthly	Consistent with Final Determination, but with less details.
3B. Consumer value from the NOA	Level of forecast savings created by the ESO through actions to encourage alternative solutions in the NOA (not including the NOA pathfinders).	Six-monthly	Consistent with Final Determination, but with less details.
3C. Diversity of technologies in NOA processes	Number and type of different solutions that participate and are successful through the NOA processes (including the NOA and NOA pathfinders).	Six-monthly	Consistent with Final Determination, but with less details.

3.32 Further details are in Appendix 2. In some areas, we intend to discuss the final details further with the ESO and make a final decision next year as part of ESORI Arrangements Guidance decision.

Final Determination rationale and Draft Determination responses

3.33 Most respondents, including the ESO, agreed with our proposal on the ESO's CBA report. We have therefore decided to take this forward. Some respondents suggested greater thinking was needed to ensure there is a robust calculation of

short and long-term benefits delivered by the ESO compared to the status quo, particularly for Role 3 activities. We agree with the need to ensure the estimation of actual achieved benefits is robust. We will work with the ESO to ensure the methods it uses are as robust as possible and visible to all parties. The experience we gain over BP1 may inform our proposals for reporting requirements in BP2.

3.34 Most respondents supported our proposed areas for Regularly Reported Evidence. The ESO supported several items but raised some concerns and considerations for others. Two respondents suggested several additional areas of Regularly Reported Evidence. We provide more detailed commentary on each item of Regularly Reported Evidence, including those proposed by stakeholders, in Appendix 2.

3.35 The RIIO-2 CG recommended that performance measures and reporting requirements are developed over time to track the ESO's progress against its strategic goals (e.g. zero-carbon operation, progress against Net Zero and whole system benefits) more clearly.

3.36 We note that performance measures are not the only way we are aiming to incentivise the ESO to progress its strategic goals. In our Delivery Schedule grading and updated ESO Roles Guidance document, we have aimed to make clear how the ESO's RIIO-2 aims are key to our overall performance expectations. Nevertheless, we agree that we should draw experience from BP1 and further refine performance measures for BP2. We are also proposing new measures for BP1 that relate more directly to the ESO's 2025 zero-carbon ambition, recognising the importance of this goal to many stakeholders. Our new SZCP indicator should create additional transparency on the ESO's progress in being able to accommodate greater volumes of low carbon technologies on the system without having to take system actions.

3.37 The ESO expressed concern about the level of reporting burden form the Regularly Reported Evidence, suggesting that the resources required to provide reporting could outweigh the likely incentive reward. We note that many of the proposals for Regularly Reported Evidence are drawn from the ESO's own Business Plan proposals. In addition, the ESO now has pass-through funding and our incentives cost benchmark accommodates nearly all the ESO's totex request. We therefore do not agree that the direct cost to the ESO of this reporting is likely to outweigh the potential for benefits. However, as discussed in Chapter 8, we intend to work with the ESO to consider streamlining various reporting requirements before the start of RIIO-2.

4. Internal costs

Introduction

4.1 This chapter sets out our decisions for the regulation of the ESO's internal costs[13] during RIIO-2, including:

- the incentives cost benchmark
- our treatment of demonstrably inefficient and wasteful expenditure (DIWE)
- the rules for changes to the ESO's shared cost allocations.

4.2 An overview of our assessment of the costs to be included in the ESO's cost benchmark is outlined in Table 6. This decision applies to BP1. We have set an initial, two-year cost benchmark of £504m, compared to the ESO's original request of £514m. We will consider adjusting the benchmark upwards following a future reassessment of the remaining £3.6m of uncertain capex and £6.1m of other price control costs.

4.3 Our cost assessment is based on the ESO's Business Plan submission, which for IT expenditure means the assumption of a shared service IT model. As noted in Chapter 8, we see clear questions over whether this is the right model for the ESO and will be taking forward further work on this issue outside of the RIIO-2 process. This may lead to future additions or reductions to the cost benchmark (eg, if new services are required and shared services are no longer required).

Table 6: Overview of cost benchmark assessment

Cost category	ESO requested costs (£m)	Draft Determination (£m)	Final Determination (£m)
ESO opex	150.4	135.6	150.4
Capex	169.0	94.1	165.4
Business Support Costs	160.7	128.6	160.7
Other price control costs	33.7	15.9	27.6
Total	513.9	374.2	504.1
Cost benchmark	**n/a**	**374**	**504**

[13] The costs the ESO incurs to run its business. The ESO also recovers 'external' costs. These are the costs it incurs to pay electricity market participants and network operators for services to operate the electricity system. External costs are regulated through our proposals in Chapters 2 and 3.

Sector specific approach to ESO cost regulation

4.4 In our May SSMD, we decided to adopt a two-year cycle for assessing the ESO's proposed totex, not to apply the Totex Incentive Mechanism to the ESO, and to align the ESO with other RIIO sectors in relation to totex disallowance arrangements. In Chapter 2 of this document, we have also confirmed our intention to introduce an assessment of value for money (VfM) within the ESO's incentives scheme. This will consider the ESO's outturn expenditure spend against a cost benchmark, the outputs it has delivered, and the ESO's explanations for any changes in costs or outputs.

4.5 This overall approach to costs is materially different to the traditional approach we employ for the transmission and distribution companies. In combination with our decisions on incentives on outputs, this framework creates a strong overall focus on the ESO's delivery of wider outcomes and the facilitation of Net Zero. It places an incentive on the ESO the maximise the value it can achieve with its price control funding, while maintaining existing consumer protections against demonstrably wasteful and inefficient expenditure.

4.6 Most stakeholders have supported our overall framework for cost regulation. However, the ESO and the ERSG expressed some remaining concerns in response to our Draft Determinations. The ERSG felt that our approach placed too much focus on cost efficiency and that we needed to further deviate from traditional regulatory methods. The ESO argued that our proposals would mean it would start RIIO-2 in a risk-averse position, as it would be fearful that any investment that exceeds the cost benchmark may lead to an incentive penalty or disallowance. The ESO also believed the proposals would cause delays to important investments because of the need to re-submit detailed project-level IT cost information every six months, to get certainty that we would deem costs efficient.

4.7 We believe this feedback relates to our specific proposals at the Draft Determinations rather than the overall cost framework. We recognise that getting the specific details of these policies right is vital for ensuring they achieve their intended outcomes. The sections below discuss our changes to the ESO's cost benchmark and our disallowance policy in response to additional evidence and stakeholder feedback. Combined, these changes decrease the evidence threshold needed for us to accept ESO estimates, substantially reduce the level of ongoing assessment, and further address perceptions of disproportionate disallowance risk.

Cost benchmark

Assessment of costs included

Purpose: the cost benchmark provides our view on the appropriate level of expenditure for the ESO's Business Plan activities. It is a key input into our evaluation of the ESO's performance under criteria (e) of the incentives scheme. We have assessed the ESO's Business Plan proposals and further evidence to set this benchmark.

Benefits: setting an appropriate cost benchmark will help incentivise the ESO to deliver value for money and maximise the impact it can deliver with its expenditure.

Summary of ESO Business Plan totex

4.8 There are four main categories of costs that the ESO incurs as part of its totex and which we include in the cost benchmark. These are outlined in Table 7.

4.9 The ESO shares certain functions with other National Grid Group companies, including IT, Human Resources (HR), finance, legal and procurement. The costs associated with these functions are allocated to the ESO by National Grid Group. Some of these costs are allocated on an indirect basis, based on a methodology to reflect the ESO's approximate usage. Others are allocated to the ESO directly (eg costs for ESO-specific property or IT investments).

4.10 In its BP1, the ESO proposed to increase its annual totex compared to RIIO-1 averages by approximately 45%. This is largely driven by its proposals to invest in new IT infrastructure, which it believes is critical to achieving its 2025 ambitions.

Table 7: ESO totex categories

Cost category	Subcategories	Details	Part of shared service?
ESO operational costs (ESO opex)	Role 1	Operating costs that the ESO incurs to deliver its outputs under its three Roles. Predominantly staff and external contractor costs.	No
	Role 2		
	Role 3		
	Supporting Operational Costs	Costs of teams that support the three Roles, such as ESO regulation, stakeholder engagement, innovation and business change.	

Cost category	Subcategories	Details	Part of shared service?
Capital expenditure (Capex)	IT and Telecoms (IT&T)	Predominantly the cost of the ESO's control centre architecture and market platforms.	Yes
	Property	Building costs associated with the ESO's Wokingham control centre and share of the National Grid Warwick office.	
Business Support Costs	IT&T	Costs for services provided by National Grid Group to support the ESO's general business activities. Predominantly IT operating costs.	Yes
	Property management		
	HR and non-operational training		
	Finance, audit and regulation		
	Insurance		
	Procurement		
	CEO and group management		
Other price control costs[14]	n/a	Other costs that do not fall into the above categories, including pension admin fees and cyber resilience IT.	Yes

Summary of Draft Determination assessment

4.11 At Draft Determinations, we adopted a bottom-up methodology for assessing ESO opex, Property capex, all Business Support Costs except IT&T and Other price control costs. This involved the combination of quantitative analysis of historical run rates and qualitative reviews of the supporting narrative for the expenditure and associated outputs by Subject Matter Experts (SMEs) within Ofgem.

4.12 We assessed IT&T costs with the input of our external experts, Atkins, using a methodology applied to all the network companies. This assessed each capex project against four criteria (project justification, definition, cost assurity and resource) and applied Red Amber Green (RAG) assessment to these to identify the recommended level of costs. Projects with one or more red ratings were not included in the cost benchmark. The remaining projects had costs reduced according to the number of amber ratings. Given the lack of detailed information about the ESO's expenditure on IT&T opex in its Business Plan, an overall RAG assessment was performed to determine the appropriate level of funding.

[14] Note: while the ESO submitted innovation allowances in these categories, they will not be part of incentivised costs, so we have removed them. Innovation allowances are discussed in Chapter 5. Additionally, we have now included Pension Admin fees within this category.

4.13 We considered that the ESO had generally provided good explanations on why its Business Plan proposals were beneficial for consumers. We therefore did not reject any proposed projects on the basis they were unnecessary or not in consumers' interest. We also acknowledged an increase in expenditure was merited for the ESO to achieve its 2025 vision. However, we did not consider the level of increases in all instances to be well justified when considered against the proposed outputs over BP1 and similar outputs in RIIO-1.

4.14 Whilst we believed the ESO had explained why a lot of its IT&T capex projects were necessary, we thought that a considerable proportion of the expenditure was highly uncertain. Given the novel, early stage nature of the proposals most of the projects had insufficient detail to enable a bottom up cost assessment of efficiency. The ESO instead used an approximate formula based on the anticipated size and complexity of projects to estimate its costs. We proposed to set a lower benchmark for IT&T costs based on the level of confidence we had in the ESO's submission. We proposed that remaining costs proposed by the ESO should be reassessed when the projects reached a sufficient stage of maturity.

4.15 For more details on our previous assessment, please see Chapter 4 of our RIIO-2 Draft Determination ESO Annex.

Final Determination

Assessment	ESO request (£m)	Draft Determination (£m)	Final Determination (£m)	Applicable period
Cost benchmark	514	374	504	BP1
Cost for future assessment	n/a	106	10	

4.16 We have derived this overall benchmark from our revised assessment of each subcategory of costs, as summarised in

4.17 Table 8. All costs are in 2018/19 prices.

Table 8: ESO totex assessment[15]

Cost category		ESO Requested Funding for BP1 (£m)	Draft Determination (£m)	Final Determination (£m)	Uncertain costs for future consideration (£m)
ESO opex					
(a)	Role 1	61.6	55.8	61.6	-
(b)	Role 2	35.1	31.9	35.1	-
(c)	Role 3	38.2	34.5	38.2	-
(d)	Supporting Operational Costs	15.5	13.4	15.5	-
(e)	**Total ESO opex**	**150.4**	**135.6**	**150.4**	**-**
Capex					
(f)	IT&T	162.4	91.4	158.8	3.6
(g)	Property	6.6	2.7	6.6	-
(h)	**Total Capex**	**169.0**	**94.1**	**165.4**	**3.6**
Business Support Costs					
(i)	IT&T	128.2	97.3	128.2	-
(j)	Property management	11.4	11.4	11.4	-
(k)	HR and non-operational training	4.8	3.7	4.8	-
(l)	Finance, audit and regulation	6.4	6.4	6.4	-
(m)	Insurance	1.6	1.6	1.6	-
(n)	Procurement	1.4	1.3	1.4	-
(o)	CEO and group management	6.8	6.8	6.8	-
(p)	**Total Business Support Costs**	**160.7**	**128.6**	**160.7**	-
Other price control costs					
(q)	**Other price control costs**	**33.7**	**15.9**	**27.6**	**6.1**
Total costs					
(r)	**Total costs (e+h+p+q)**	**513.9**	**374.2**	**504.1**	**9.8**

[15] Numbers in table may not appear to add due to rounding.

Final Determination rationale and Draft Determination responses

4.18 We have actively engaged with the ESO since Draft Determinations and have received additional evidence of its original costs estimates. Overall, the ESO has provided strong additional evidence that better justifies many of its original costs.

4.19 We have also reflected on feedback from the ESO that our previous positions risked dis-incentivising agile spending and creating delays due to excessive bureaucracy around small cost adjustments. As a result of the improved confidence we have in the ESO's costs overall, we have subsequently adapted our assessment methodologies to decrease the justification thresholds that the ESO needs to meet for costs to be included in the cost benchmark. Our updated approach only reduces the ESO's cost estimates where we consider they are clearly unjustified or highly uncertain.

4.20 As a combined result of much improved evidence and our updated method, we have included the ESO's own cost estimates within the benchmark in the vast majority of cases. Whilst some of these estimates still contain a degree of uncertainty, we have been sufficiently comforted from additional evidence and dialogue with the ESO that in most places they are a reasonable starting point for a VfM assessment.

4.21 Our final position substantially reduces the need for us to reassess small costs in the future, which will allow us and the ESO to focus on the ESO's delivery of outputs. We believe this will avoid disproportionate scrutiny or micro-management of small-scale project costs, giving the ESO the space and confidence to progress its Business Plan proposals in the best way possible for consumers.

4.22 We recognise that our updated methodology means that the cost benchmark is more likely to be too high than too low. This risks there being reduced pressure on the ESO to deliver value for money. However, we consider that setting the benchmark too low presents the greater relative risk to consumers of delays to important investments, less agile spending, and potentially a less effective pathway to Net Zero. This could have much larger cost implications for consumers.

4.23 The ESO was the only party to respond in detail to this question. We summarise its response and our rationale for our final positions for each cost category below.

ESO opex

4.24 The ESO did not agree with our assessment of opex, citing an inappropriate reference to historical expenditure as part of our assessment method. It also considered that we had treated opex and capex for the same IT projects inconsistently. Our review of the ESO's subsequent evidence and engagement has enabled us to better understand and address the deficiencies in the original Business Plan. We now believe the ESO's opex request is a reasonable cost estimate for the activities it intends to carry out during RIIO-2.

Capex

4.25 The ESO did not agree with our assessment of IT capex. The ESO asserted that the assessment was overly subjective, did not reflect the stages of IT investments, and failed to account for initial start-up costs. It also highlighted inconsistency in the assessment of shared IT projects across NGET, National Grid Gas Transmission (NGGT) and the ESO.

4.26 Our engagement with the ESO and our review of its additional evidence has helped to address the lack of detail and cost assurance within its IT&T portfolio. We also sought further clarity from National Grid Group on shared projects, which it acknowledged had been inadequately signposted. This allowed us to revise the assessment, so it was conducted at a project level. As a result of the better evidence, we have upgraded the RAG rating applied to the majority of IT projects. The results of our updated RAG assessment are in Appendix 4.

4.27 For Final Determinations, we have reduced the number of IT projects receiving one or more red RAGs from fifteen to two (totalling £3.6m). The ESO did not provide clear additional evidence related to these two remaining red projects and we therefore retained our Draft Determination RAG ratings. As result, costs for these projects will not be included in the cost benchmark initially, but we will consider them for inclusion in the future.

4.28 There are still 28 IT projects with at least one Amber rating. If we applied our Draft Determination methodology for setting the cost benchmark, this would result in significant future reassessment of costs (in some cases on differences of less <£1m). We do not think that this is in consumer's interests, for the reasons described above. We therefore have decided to include within the cost benchmark all the ESO's own estimates for projects that do not have a red rating. Whilst our

approach for the ESO differs from the approach we have adopted for other network companies, we believe this is justified given the ESO's different funding model and lack of totex incentive. To provide ongoing assurance over high value IT projects with remaining amber ratings, we will ask the ESO to place a focus on these projects as part of its reporting (as discussed below).

4.29 The ESO did not agree with our assessment of Property capex and provided a more detailed breakdown. This provided us with comfort that the Property capex costs are reasonable.

Business Support Costs

4.30 The ESO did not agree with our assessment of the IT&T component of Business Support Costs. It highlighted its greater reliance on subscription services going forward and therefore a lack of comparability with historical costs. The ESO also did not agree with our proposed reduction of £1.1m for HR and non-operational training and provided additional evidence in support of these costs.

4.31 Following the ESO's additional evidence, we are now clearer how a significant proportion of the IT&T Business Support Costs can be traced back to the capex investments they underpin. We also recognise the unique training requirements for staff to support the ESO's role in managing the system. We are now satisfied the ESO's Business Support Costs are reasonable.

Other price control costs

4.32 Our assessment of Cyber resilience IT costs is confidential and not discussed in this document in the interests of national security. A confidential Cyber Resilience Annex containing our Final Determination has been shared with the ESO.

Allocation of costs per role

Purpose: as our incentives evaluation applies to each of the ESO's three Roles, we need to apportion the cost benchmark between these Roles.

Benefits: ensuring there is a reflective allocation of costs per Role enables an accurate assessment of performance for each Role.

Final Determination

Cost type		Final Determination	Draft Determination	Applicable period
Opex	Role specific opex	As determined in Table 8, rows (a), (b) and (c) respectively.	Same as Final Determination	BP1
	Supporting Operational Costs	1/3 split per role.	Same as Final Determination	
Capex		Targeted allocation methodology that we will agree with the ESO prior to start of RIIO-2. This may allow proportions to be reset after 1 year to account for actual expenditure.	Role 1: 45% Role 2: 35% Role 3: 20%	
Business Support Costs			1/3 split per role	
Other price control costs			1/3 split per role	

4.33 The precise methodology to allocate Capex, Business Support Costs and Other price controls will be confirmed as part of our decision on the ESORI Arrangements Guidance document next year.

Final Determination rationale and Draft Determination responses

4.34 The ESO noted challenges with our proposed approach as it believed around half of its costs do not sit meaningfully in one Role. In particular, the ESO did not consider that all IT projects were solely relevant to one Role and noted that the splits of Capex would change over time. It also considered our proposal would risk the incentive result being skewed, as the VfM assessment for each Role would not be based on a true picture of costs, with this effect being tripled across the three Roles. The ESO suggested three alternative options:

- reporting costs on an aggregate level (not split by Role), with a portion of the incentive pot allocated to the VfM assessment, separate to the Role-based incentive performance assessment
- reporting a sub-section of costs by Role level which would be included in the Role-based incentive performance assessment, with a separate VfM assessment (and separate pot) for the other costs
- excluding costs that are not Role-specific from the VfM incentive assessment.

4.35 We note that Capex, Business Support Costs and Other price control costs make up the majority (over 70%) of the ESO's costs. For us to understand meaningfully the ESO's VfM in delivering role-specific outputs, we need to consider all associated costs, including those that only indirectly support the ESO's delivery. Whilst we recognise there is no perfect way to allocate non-role specific costs within the structure of our incentives, we do not consider that the ESO's proposed alternatives are workable or in the interests of consumers. We believe creating a separate proportion of the incentive pot to assess non-role specific costs prevents us from considering value for money in terms of what has been delivered. It also risks placing a disproportionate focus on these costs.

4.36 We have discussed the issue with the ESO further since Draft Determinations and believe that there may be merit in adopting a more sophisticated approach to allocating certain costs. We also agree it could be sensible to allow the role specific benchmark to adjust for changes in relative Capex spend each year. We have asked the ESO to put forward an option in this area which we will consider as part of our ESORI Arrangements Guidance consultation.

Treatment of uncertain IT capex costs

Purpose: our assessment has found that many of the ESO's IT investment costs are uncertain as they are novel and, in many cases, still in early stages of development. We need to decide how to treat these costs.

Benefits: applying an appropriate approach to uncertain IT will strike the right balance between allowing the ESO to progress beneficial investments at pace, while setting a reliable ex ante cost steer.

Final Determination

IT RAG Assessment	Final Determination	Draft Determination	Applicable period
One or more Red RAG ratings	Costs will not be included in the cost benchmark initially. Instead, we will reassess the costs and adjust the cost benchmark when we consider the ESO has provided sufficient information against our IT&T assessment criteria to turn all red RAG ratings to at least Amber. We will consider updates to the cost benchmark on a bi-annual basis, alongside the ESO's six-monthly performance reviews (so long as	Similar to Final Determinations, although we have since streamlined the process.	BP1

IT RAG Assessment	Final Determination	Draft Determination	Applicable period
	new information is submitted less than six weeks ahead of a performance review).		
No Red RAG rating but one or more Amber ratings	The ESO's full Business Plan cost estimate will be included within the cost benchmark. We will place an additional requirement on the ESO to provide six-monthly updates on the delivery and latest cost forecasts, of high value projects (>£7.5m) with at least two Amber ratings.	We reduced the total project cost included within the cost benchmark according to the number of Amber RAG ratings.	

4.37 Table 9 shows which IT capex projects are impacted by these decisions.

Table 9: Capex projects with specific requirements

Approach to project	Relevant projects
Not included in the cost benchmark initially and assesses at a future date later.	Project TERRE Central Project Wokingham ENCC Capex
Full ESO cost included within the cost benchmark, but six-monthly updates provided.	110 Network control 180 Enhanced balancing capability 220 Data and analytics platform 500 Zero carbon operability

Final Determination rationale and Draft Determination responses

4.38 The ESO did not agree that the Draft Determinations struck the right balance between allowing the ESO to progress beneficial investments at pace, while setting a robust and reliable ex ante cost steer. The ESO suggested the process must recognise that some IT systems are new and innovative and their specifications are not fully set out. The ESO argued there should be a contingency added to these projects rather than reductions. The ESO also argued that scrutinising each IT project on an individual basis is disproportionate and that only the overall effectiveness of spending should be assessed. We received few other responses, but most felt our approach was sensible.

4.39 We recognise the need to avoid introducing disproportionate processes for small costs and agree that it is overall value for money that is important, not small movements in individual costs. As a result of the improved confidence we have in the ESO's cost estimates since Draft Determinations, we now consider it would be disproportionate to reassess all Amber rated projects. We have accepted the ESO's cost estimates recognising that many of the ESO's IT investments are unique and therefore difficult to benchmark. We believe focussing on the

successful delivery of high value projects is more important. We do not see a clear justification for adding contingency to the cost benchmark for uncertain projects, particularly as the evaluative incentive approach enables us to consider justifications for changes in overall expenditure.

Value for Money reporting

Purpose: to provide us, the Performance Panel and stakeholders with regular updates to enable an assessment of VfM, under criteria (e) of the incentives scheme

Benefits: provides transparency on the ESO's delivery of value for money.

Final Determination

Policy	Final Determinations	Draft Determination	Applicable period
VfM reporting	For each Role, the ESO should provide six-monthly reporting on the overall expenditure it has incurred over the course of BP1, and the ESO's forecast for the remainder of BP1. The ESO should explain the key reasons for differences from the cost benchmark in its report, which should be closely linked to its outputs delivered.	Same as Final Determination	BP1
Indicative reporting threshold	Where costs are less than ±10% of the cost benchmark, and there has been no major changes to output delivery, minimal reporting will be required. Where costs are greater than ±10% of the cost benchmark, the ESO should provide detail on the specific drivers of the deviations.	n/a	

4.40 Fuller guidance on the VfM reporting process will be included in the ESORI Arrangements Guidance document, which we are consulting on further this December.

Final Determination rationale and Draft Determination responses

4.41 The ESO argued that the ongoing process to provide regulatory submissions on costs and performance must be proportionate and commensurate with the scale of ESO's costs. It should not prevent the ESO from being agile and proactive in responding quickly to changing market needs and going after consumer value. The ESO felt there should be a 10% materiality threshold or 'dead band' within which changes to costs will not be considered in the VfM incentive.

4.42 We have engaged with the ESO since Draft Determinations to provide reassurance that the approach we intend to take to VfM reporting is proportionate. This focusses on overall value for money and not granular shifts in individual projects costs compared with forecasts.

4.43 We believe it will be beneficial to include an indicative ±10% threshold to guide the expected level of VfM reporting. We note this is different to the ESO's suggestion for any costs within ±10% to be excluded from consideration in the incentives altogether. We feel the ESO's proposal would be incompatible with the VfM approach, where both costs and outputs are considered in the round. However, our indicative 10% reporting threshold should give the ESO and indication of our appetite for looking at the detail of costs, assuming outputs are broadly delivered. This will provide the ESO with greater confidence to be agile and incur different costs from its estimates when this is in consumers' interests.

Demonstrably inefficient or wasteful expenditure

4.44 Our price control is designed to fund the regulated business of the ESO. The RIIO-1 price control has a provision to disallow DIWE on totex. In our SSMD, we decided to continue with this provision into RIIO-2. The ESO and other stakeholders have raised concern that applying the same RIIO-1 policy could create disproportionate risk for the ESO. Below we discuss two areas of DIWE policy, bespoke to the ESO framework, that are designed to provide comfort to the ESO that we would use this provision proportionately.

Cap on disallowance of DIWE

Purpose: limits the amount of DIWE Ofgem can disallow each year.

Benefits: by limiting the perception of disallowance risk on the ESO to an appropriate level we can ensure the ESO does not take an overly risk-averse approach to its investments.

Final Determination

Policy	Final Determination	Draft Determination	Applicable period
DIWE cap (% RAV per year)	2.5%	10%	BP1

Final Determination rationale and Draft Determination responses

4.45 The ESO and the three other respondents that commented on this issue all felt a lower cap was necessary. They felt a 10% of Regulatory Asset Value (RAV) cap could create too much risk for the ESO and lead to risk averse decision-making.

4.46 The ESO and ERSG argued that we had not made the ESO's disallowance risk equivalent to the risk on network companies in practice. They noted that the ESO has more first-of-a-kind expenditure and that disallowing 10% of the ESO's RAV was more conceivable than disallowing all a network company's totex in one year. The ESO suggested a cap of 1% RAV would be more equivalent to network companies' level of risk, whilst the ERSG suggested we should lower the cap and/or provide additional comfort around disallowance. Two other respondents suggested a cap that aligned with the incentive scheme upside could effectively limit perceptions of disproportionate risk.

4.47 Through our price control design and Final Determinations, we believe we have clearly demonstrated that our focus is encouraging the ESO to maximise overall benefits for consumers rather than driving efficiencies in its totex. In our decision on the cost benchmark, we have agreed that the ESO should embark on almost all its first-of-a-kind IT expenditure. There is also a high bar for costs to be classed as DIWE, as shown through the lack of disallowance of ESO DIWE in RIIO-1 and our principles set out below. All these factors suggest the risk of disallowance of DIWE is not as material as the ESO has argued in its consultation response.

4.48 Nonetheless, we recognise that the price control is new and untested, which could mean that investors or the ESO has a higher perception of risk than we do. We therefore see merits in further capping disallowance risk. We consider that a cap of 2.5% of the ESO's RAV would be an appropriate value. This would mean the total combined downside for the ESO on incentives and disallowance is less than the total upside (based on the ESO's projected RAV over RIIO-2). In our view, this would mean the ESO therefore has more to gain than lose from embarking on the novel and innovative investments needed to facilitate Net Zero.

4.49 In setting this cap, we have balanced the potential benefits of enabling the ESO to deliver its plan rapidly and ambitiously, against the risks of reducing consumer protection. We do not consider this cap would excessively weaken consumer protection, given the ESO's more agile, modular approach to project development, combined with our six-monthly VfM incentive assessment.

4.50 We intend to keep this cap under review, based on the ESO's track record of delivery and any Ofgem use of DIWE disallowance powers. We will consider adjusting the value of the cap at the start of BP2, if we believe this is in consumers' interests.

Approval of policies and disallowance principles

Purpose: designed to provide the ESO with up front clarity on how we would seek to apply any disallowance of DIWE to the ESO's costs.

Benefits: by providing up front clarity on our approach to disallowance we can give the ESO greater comfort when making investment decisions.

Final Determination

Policy	Final Determination	Draft Determination	Applicable period
Key internal expenditure policies	The ESO will submit two internal expenditure policies to Ofgem for approval (covering staff remuneration and travel and expenses).	Same as Final Determination	RIIO-2
DIWE principles	We have modified the disallowance principles to provide greater ex ante certainty about how and when ESO expenditure may be disallowed.	See Chapter 4 of our Draft Determination for the original drafting of principles.	RIIO-2

Final Determination rationale and Draft Determination responses

Approach to ESO policies

4.51 In our Draft Determinations, we proposed the ESO to create and submit to us a limited number of key internal ESO expenditure policies. These policies, which were proposed to cover Staff Remuneration and Travel and Expenses, would be approved by Ofgem to provide the ESO with confidence and certainty that any expenditure in line with these approved policies would not be considered as inefficient or wasteful.

4.52 Only the ESO responded directly on this element, noting that the existence of this proposal *"cannot be reconciled with the description of disallowance risk as in line with other networks, or a backstop power only".* In subsequent engagement, the

ESO noted that it believed our proposals would lead to a highly granular and bureaucratic assessment that is inconsistent with a backstop tool. Although the ESO's first preference was for no approval of internal policies, when presented with alternative options that would reduce the possible bureaucratic burden at the expense of providing the ESO with less assurance, the ESO noted a preference for greater assurance.

4.53 We confirm that only two policies, Staff Remuneration and Travel and Expenses, will be required to be submitted to us for approval. The intent of this requirement is to provide the ESO with more certainty in relation to these costs. We do not anticipate this being a highly granular process. We understand that the ESO has existing policies in these areas and we expect that the policies will be shared and approved once (unless subject to material revisions). Once approved we expect the ESO will act in accordance with these policies and this will eliminate any need for the ESO and us to engage regularly on these areas.

DIWE principles

4.54 Respondents were largely supportive of our DIWE approach and the principles, noting that they should provide the ESO with sufficient comfort and certainty. The ESO's response asserted that the existence of the principles was a clear demonstration that the disallowance risk is greater for the ESO than other network companies and suggestive of *"a highly granular and detailed scrutiny of ESO costs, well beyond the remit of a backstop tool"*. In subsequent engagement the ESO clarified its views noting that providing guidance that aligns expectations is better than not providing guidance. The ESO also proposed specific amendments to the principles, which we have taken on board in our revisions.

4.55 We do not agree with the ESO that the existence of the principles and extra guidance implies the ESO has greater disallowance risk than other network companies. We included the principles in direct response to misperceptions and concerns raised previously by the ESO and stakeholders regarding how the existing DIWE process could be applied in the context of the ESO's new price control. Given the new and unique nature of the ESO's price control, and the absence of similar concerns being raised by other network companies, we produced guidance for the ESO only. While significant parts of this could apply to all network companies, we have used this as an opportunity to include ESO-specificities to respond directly to the concerns we heard from the ESO and ESO stakeholders.

4.56 The following principles are intended to provide greater ex ante certainty about how and when ESO expenditure may be disallowed. To date, we have never disallowed any ESO internal expenditure and we anticipate that disallowance will continue to be a backstop used by exception rather than a frequently used regulatory tool. The modified principles are listed below:

a) All efficient expenditure will be recoverable.
b) All expenditure is presumed efficient until Ofgem comes to the decision that it is not. Where Ofgem decides that expenditure which has already been incurred is to be disallowed as DIWE, Ofgem must demonstrate that the expenditure which was incurred was inefficient or wasteful.[16]
c) Disallowance is not a regularly scheduled process. Ofgem will initiate disallowance considerations only if evidence of potential inefficiencies emerge.
d) Expenditure that is consistent with policies approved by Ofgem will not be considered as inefficient or wasteful.
e) Efficiency will be considered on the basis of the knowledge and the information available to the ESO at the time of incurring the expenditure.
f) Overspend against initial allowances does not equate automatically to inefficient expenditure.
g) Any disallowance decisions would take into account the ESO's financeability and shall have regard to the need to ensure that the ESO is able to finance the activities which it is obligated to undertake.
h) Where any expenditure is disallowed within a Business Plan period, Ofgem will not consider those costs as outturn expenditure for the incentives decision at the end of the Business Plan period.
i) Disallowance decisions will only be made by Ofgem following engagement with the ESO and an opportunity for the ESO to provide evidence and explanation. Ofgem will then publish all disallowance decisions and the rationale for them.

Rules for shared costs allocations

Purpose: to protect consumers from the risk of cross-subsidy across National Grid price controls given the different funding mechanisms for the ESO compared to NGET and NGGT.[17]

[16] The words 'inefficient' and 'wasteful' are not separately defined, and are therefore given their natural meaning.
[17] The RIIO-1 price controls for the ESO, NGET and NGGT have a consistent design. There is limited potential therefore for changes in the shared services costs allocations to impact overall National Grid Group profitability.

Benefits: to create transparency on the allocation of costs between National Grid companies and reduce the risk of cross subsidy.

Final Determination

Policy	Final Determination	Draft Determination	Applicable period
Reporting of shared cost allocations	National Grid and ESO to clearly notify Ofgem of any changes to cost allocation drivers (including the creation of new cost centres/drivers), explaining the reason for the change and the forecast financial implications for each National Grid Group regulated licensee.	Same as Final Determination.	BP1
ESO board notice on shared cost allocations	Notice from the ESO board to Ofgem that it is satisfied that any changes to the allocation drivers (including the creation of new cost centres/drivers), are fair and reflective of the ESO's consumption of shared services.	Consistent with Final Determination[18]	

Final Determination rationale and Draft Determination responses

4.57 Most respondents agreed with our proposals. One respondent noted that they appeared to offer sufficient protection but should be kept under review.

4.58 The ESO recognised the need for appropriate controls and balances on shared costs given the different funding models. It noted that National Grid already provides extensive data in this area but that it is happy to discuss areas for improvement. We will discuss the precise presentation of information with National Grid before the start of RIIO-2.

4.59 The ESO disagreed that the ESO Board should review changes to shared cost drivers. It felt this was beyond the ESO Board's remit as it would need to understand the usage of other regulated businesses across the group. The ESO also believed it would undermine the independence of the existing process and risk cross-subsidy. In our subsequent engagement with the ESO on these issues, it suggested any changes in existing allocation drivers or new allocation drivers should be reported to the Finance Directors of each licenced entity (including the ESO) for them to review and, if need be, challenge.

For RIIO-2, the ESO will have a pass-through funding model with two-year Business Plan periods, while NGET and NGGT will retain a totex incentive mechanism and allowances fixed for a five-year period.

[18] For Final Determinations we have clarified an approval from the ESO board is not a prerequisite for an allocation change.

4.60 We do not agree that shared cost allocation is an independent process, given that it is undertaken by National Grid Group on behalf of all National Grid licensees. National Grid Group has a financial interest in maximising the overall profitability of the National Grid companies. We think it is vital that the ESO (and therefore ESO board) actively seeks to understand new allocation drivers and changes to allocation drivers. Equally, National Grid Group needs to explain these allocations clearly and transparently to the ESO, recognising that shared costs make up a substantial proportion of the ESO's overall costs and the ESO board oversees the ESO's budget.

4.61 We therefore disagree this issue is beyond the ESO board's remit. The process does not give the ESO the right of veto over shared cost allocations. Instead it requires the ESO to notify to Ofgem whether, in the ESO's view, the changes to the ESO's allocation drivers are fair. We believe it is important for us to be made aware of any potential concerns from the ESO. We also consider there is a much greater risk of cross subsidy in the situation where the ESO has limited understanding or ability to verify changes to allocations drivers.

4.62 As these arrangements are new, we will review the effectiveness of these polices and make changes prior to BP2 if necessary. We also note that the vast majority of shared costs are IT related, so this issue may be impacted by the outcomes of further work on ESO IT governance, which is discussed in Chapter 8.

5. Finance

Introduction

5.1 In this chapter, we confirm our final decisions for the notional ESO, in line with the consultation issues from Draft Determinations.[19] This chapter should be read alongside the Finance Annex which captures other relevant issues for the ESO, including on capitalisation and depreciation. Table 10 summarises our final decisions for the ESO, including the applicable timeframe and the location where further detail can be found on each element.

Table 10: Finance decisions for the ESO

Finance Area	Final determinations	Applicable timeframe	Location
Allowance for debt financing of RAV	Debt allowances to reflect shorter term debt measures which we forecast to be -0.07%.	RIIO-2	This chapter (see paragraph 5.3)
Allowance for equity financing of RAV	7.55%, subject to equity indexation updates during RIIO-2.	RIIO-2	This chapter (see paragraph 5.8)
Allowed return on capital	3.36%, subject to debt and equity indexation updates during RIIO-2.	RIIO-2	This chapter (see Table 12)
Additional funding - other	£4.8m (nominal prices)	BP1	This chapter (see paragraph 5.28)
Additional funding – Working Capital Facility (WCF)	WCF costs passed-through (estimated at £0.7m-£0.9m, nominal prices).	BP1	This chapter (see paragraph 5.28)
Financeability	We find that a notional ESO can finance its licensed activities and confirm a 55% notional gearing level.	RIIO-2	This chapter (see paragraph 5.46)
Depreciation	A 7-year period for depreciation.	RIIO-2	Finance Annex
Capitalisation rates	Annual capitalisation rates that reflect expected split between capex and opex expenditure (37% for 2021/22 and 34% for 2022/23).	BP1	Finance Annex
All other finance issues	Most other issues consistent with approach taken for networks.	RIIO-2	Finance Annex

[19] RIIO-2 Draft Determinations - ESO
https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_eso.pdf#page=72

Debt financing of the RAV

Description

5.2 In the October methodology decision for the ESO we decided to use full indexation to determine a cost of debt allowance.[20] This decision meant that the ESO would receive an allowance each year to reflect observed, rather than forecast, debt costs.

Final Determination

5.3 The table below sets out our final decisions on debt allowances.

Policy	Final Determination	Draft Determination	Applicable period
Approach	a) To provide an allowance which reflects SONIA plus a spread element b) To fix the spread element, as calculated to the end of October 2020, at 1.80%, which is the sum of: • the average of: the 3-year trailing average asset swap margin on the 5-7yr iBoxx Utilities index; and the 3-year trailing average asset swap margin on the 7-10yr iBoxx Utilities indices, plus • the 3-year trailing average of the differential between 6m LIBOR and overnight SONIA, plus transaction costs, of 0.10% c) At each annual iteration process, to: • true-up prior year allowances for outturn SONIA rates • update SONIA forecasts for subsequent years.	An indexation mechanism that referenced annually updating SONIA[21] rates plus a 3-year trailing average asset swap margin, a 3-year trailing average LIBOR-SONIA differential and 10bps for transaction costs.[22]	RIIO-2
Forecast allowance over RIIO-2[23]	-0.07%[24]	-0.05%	

[20] RIIO-2 financial methodology and roles framework for the Electricity System Operator https://www.ofgem.gov.uk/system/files/docs/2019/10/riio-2_financial_methodology_and_roles_framework_for_the_eso_0.pdf#page=13
[21] Sterling Overnight Index Average. See https://www.bankofengland.co.uk/markets/sonia-benchmark for further info.
[22] LIBOR refers to the London Inter-bank Offered Rate from estimates submitted by the leading banks in London
[23] Values stated on a pre-tax real basis.
[24] Using the updated WACC allowance model as published alongside this decision.

Final Determination rationale and Draft Determination responses

5.4 The ESO welcomed our proposed index, noting alignment with its Business Plan. The ESO noted that refinancing total debt over a 3-year period would not be cost effective and that its estimate of 10 basis points (bps) for transaction costs was based on debt raised for a 5-year period, not three. For this reason, the ESO suggested that a fixed spread based on a 3-year average, fixed at the start of the price control period (rather than updating this element each year), would better reflect the notional ESO's real cost of debt.

5.5 The other stakeholders that commented, one of which was the RIIO-2 CG, either supported the proposed methodology or did not raise any concerns.

5.6 We consider the ESO's suggestion of a fixed spread appears reasonable and note it is not materially different from our Draft Determination proposals. Given the simplicity and relatively small materiality, we agree to fix the spread element at the start of the price control and only update for movements in SONIA.

Equity financing of the RAV

Description

5.7 In October 2019 we decided to set an equity allowance for the ESO by following the approach for transmission and gas distribution networks, including the three-step approach and equity indexation.[25] At Draft Determinations, we followed this three-step approach and proposed an allowed return on equity of 5.28% for the ESO.[26]

[25] RIIO-2 financial methodology and roles framework for the Electricity System Operator https://www.ofgem.gov.uk/system/files/docs/2019/10/riio-2_financial_methodology_and_roles_framework_for_the_eso_0.pdf#page=16

[26] RIIO-2 Draft Determinations - ESO https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_eso.pdf#page=78

Final Determination

5.8 The table below sets out our final decisions on equity allowances.

	Final Determination	Draft Determination	Applicable period
Asset beta assumption	0.55	0.45	RIIO-2
Baseline allowed return on equity[27]	7.55%	5.28%	

5.9 The baseline allowed return on equity will be updated during each of the five years of RIIO-2, in line with the equity indexation approach we proposed at Draft Determination and as per our final decisions for the WACC allowance model (see Finance Annex for further info).

5.10 Our decision to set an allowed return on equity of 7.55% reflects the assumptions shown in Table 11 below. In line with our Draft Determination approach, our final view on the allowed return is in line with the CAPM-implied[28] estimate, and therefore not adjusted to reflect cross-checks or expectations of outperformance.

Table 11: CAPM-implied cost of equity and allowed return on equity (CPIH-real)

Component	Point	Ref	Source
Debt beta	0.075	A	Ofgem judgement. See Finance Annex
Asset beta	0.55	B	Ofgem judgement
Notional gearing	55%	C	Ofgem judgement. See Paragraph 5.46
Notional Equity beta	1.13	D	= [B - (C * A)] / (1 - C)
Risk-free	-1.58%	E	Bank of England. See Finance Annex
Total Market Return	6.5%	F	Ofgem judgement. See Finance Annex
CAPM-implied cost of equity	7.55%	G	= E + D * (F – E)
Expected outperformance	0%	H	Ofgem judgement
Baseline allowed return on equity	7.55%	I	= G-H

Final Determination rationale and Draft Determination responses

5.11 On generic CAPM parameters, the ESO referred us to evidence submitted by the Energy Networks Association, noting its disagreement with Draft Determination

[27] Values stated on a post-tax real basis.
[28] Capital Asset Pricing Model

proposals for Total Market Return (TMR), risk-free and debt beta. We address these issues for all sectors including ESO within the accompanying Finance Annex.

5.12 On asset/equity beta, the ESO focused on our proposed asset beta of 0.45, arguing that it was too low for several reasons, including:

- CEPA uses an incorrect value for the asset beta of NATS En-route Limited plc (NERL)
- CEPA inappropriately uses the asset beta of NERL as a ceiling
- CEPA mistakenly suggests regulatory discretion reduces systematic risk when it more likely increases it. An adjustment is required for the additional systematic risks faced by the ESO under the evaluative incentive scheme
- there is no recognition that the ESO regulatory framework is new and untested and so represents higher risk that should be remunerated
- Ofgem has inappropriately chosen to 'aim down' and use the bottom of the range proposed by CEPA.

5.13 In support of this, the ESO refers to its advice from KPMG. We address KPMG's views within the Finance Annex published alongside these Final Determinations (see Appendix 1, consultancy report 17). The ESO argued that "[t]he SONI[29] CMA appeal outcome of 0.6 represents the most appropriate start point for the asset beta. The ESO incentive scheme then drives a further increase in systematic risk, above that of SONI, such that an asset beta of 0.74 can be justified."

5.14 By contrast, the RIIO-2 CG believe that the proposed 5.28% cost of equity allowance is at the upper end of the range that might be deemed appropriate. The RIIO-2 CG suggest further risk reductions can be inferred from:

- the cost pass through policy
- capped disallowance risk
- 2-year business plan cycles
- IT project policies, which benefit from project by project ex-ante agreement
- The incentive regime is a smaller proportion of RAV than it was in RIIO-1 with only £6m downside, compared to £30m during RIIO-1. It is also asymmetric with a much higher range on the upside.

[29] System Operator for Northern Ireland (http://www.soni.ltd.uk/)

5.15 Citizen's Advice suggested that the ESO's systematic risk is low due to a cost pass-through policy during RIIO-2.

5.16 We note recent beta estimates, as follows:

a) CMA's provisional findings for PR19 appeals suggest a debt beta range between zero and 0.15, and therefore a mid-point of 0.075[30]
b) CMA's provisional findings for the NATS En-route Limited (NATS) appeal suggest an unlevered beta between 0.5 and 0.6[31]
c) Recent estimates of SONI's asset beta:

- KPMG's estimate of 0.54 to 0.61[32]
- SONI's proposal of 0.57, and[33]
- UR's proposal of 0.50.[34]

5.17 We compared these estimates with ESO's response, which suggested an asset beta from 0.6 to 0.74 (see paragraph 5.13 above). We also re-considered how ESO's RIIO-2 framework could be compared with relevant benchmarks. On this basis, we were unable to see good reasons for the ESO's beta to be as high as 0.74. We were not persuaded that the proposed incentive scheme would justify a higher asset beta than 0.6, and the ESO appeared to risk a double count to get to 0.74. Further, ESO's focus on SONI as a benchmark suggests that values lower than 0.6 would be appropriate, given the more recent estimates listed at 5.16c), including by KPMG.

5.18 In terms of risk exposure, we considered how ESO's framework compares with NERL's. CEPA's analysis, as published alongside Draft Determinations[35], suggests that the NERL incentive framework contains more RAV exposure than ESO's, with

[30] Water Provisional Determinations Report https://assets.publishing.service.gov.uk/media/5f72f3d2e90e0740cf4eb0a9/Water_provisional_determinations_report_all_-_September_2020_---_web_-.pdf#page=587
[31] NATS CAA Final Report https://assets.publishing.service.gov.uk/media/5f350e17e90e0732e0f31c2a/NATS_-_CAA_final_report_for_publication_August_2020_-----.pdf#page=252
[32] Uregni Draft Determination – Technical Annex https://www.uregni.gov.uk/sites/uregni/files/consultations/Annex%207%20Risk%20and%20return.pdf#page=31
[33] Ibid
[34] Uregni Draft Determination – Technical Annex https://www.uregni.gov.uk/sites/uregni/files/consultations/Annex%207%20Risk%20and%20return.pdf#page=44
[35] Ofgem Draft Determinations – Technical Annexes https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_technical_annexes_part_two_2.zip (See "Draft Determinations - ESO Returns (CEPA).pdf")

RAV downside for NERL at approximately 3.7%[36] compared with 1.9%[37] for the ESO. Whilst we do not consider this comparison as a perfect indicator of systematic risk, it contrasts with the ESO's claim that its incentive scheme would justify a higher beta than 0.6. One difference between the exposures is that NERL's exposure is heavily influenced by volume risk whereas ESO's is heavily influenced by the evaluative incentive scheme, which can be interpreted as a form of regulatory discretion.[38] It is easy to see that the evaluative incentive scheme should be a softer conduit of systematic risk than volume risk. For example, the impact of COVID-19 will strongly impact passenger volumes, whereas ESO's evaluative incentive scheme is better insulated from such systematic risks.

5.19 The ESO claimed that CEPA used an incorrect value for the asset beta of NERL. However, in our view, CEPA's analysis is in line with CMA's provisional findings for NERL. For example, page 28 of CEPA's report quotes an asset beta range of 0.52-0.62 which precisely matches CMA's quoted range (0.52-0.62) given CMA's debt beta assumption of 0.05.[39] We also note CEPA use various debt beta assumptions when interpreting CMA's view of NERL's beta. We note that CEPA provided an independent view of NERL's asset beta (0.50-0.57, when using a 0.125 debt beta) which is lower than CMA's. ESO argue that "[i]t is inappropriate for CEPA to substitute their own view of the range for asset beta of NERL for that actually determined by the CMA." We highlight that CEPA's different view from the CMA does not necessarily render it incorrect.

5.20 The ESO's claim that we have inappropriately chosen to 'aim down' may be misleading. For example, our Draft Determinations did not state an Ofgem view on the asset beta range – the ESO may have inferred this from CEPA's advice to Ofgem. Related to this, we note CMA's provisional findings for PR19, and the reference to asymmetry when setting allowed returns above the mid-point of a cost of equity range.[40] Arguably, using CMA's logic and given the proposed larger incentives upside for RIIO-2 in isolation, we should aim down on a given beta range for the ESO. We consider asymmetry further below.

[36] See CEPA report page 25 for two estimates of exposure: 1) capacity, 3Di target and capex delivery (-1.5%); and 2) volume risk (-2.2%).
[37] -£6m incentive downside divided by RAV estimate of £312m.
[38] The ESO's incentive scheme is discussed further in Chapter 2. The scheme includes the consideration of external factors and mitigating reasons for changes in costs and delivered outputs. The ESO has to be judged to underperform multiple different criteria and performance measures to face maximum penalties.
[39] NATS CAA Final Report https://assets.publishing.service.gov.uk/media/5f350e17e90e0732e0f31c2a/NATS_-_CAA_final_report_for_publication_August_2020_-----.pdf#page=252
[40] PR19 Provisional Findings https://assets.publishing.service.gov.uk/media/5f72f3d2e90e0740cf4eb0a9/Water_provisional_determinations_report_all_-_September_2020_---_web_-.pdf#page=674 (para 9.674).

5.21 Regarding ESO's other claims that an asset beta of 0.45 is too low, the most convincing, in our view, is that the ESO regulatory framework is new and untested.[41] We found that there is some legitimacy in this claim, although we would add that many changes to the ESO's framework are designed to reduce risk. We also highlight that the incentives framework is not completely new. Nonetheless we could agree with the ESO that new mechanisms require implementation and testing, which can warrant a perception of risk until established and proven. However, we are also conscious of the arguments made by Citizens Advice and the RIIO-2 CG, that the ESO framework is low risk, which we find persuasive. Taking these arguments together, our Final Determinations could indicate a cautious judgement of ESO's asset beta, which should be re-considered when its regulatory framework becomes more established.

5.22 Overall, in our view, values of 0.075 for debt beta and 0.55 for the asset beta, are reasonable for the five-year period of RIIO-2 for the ESO.

WACC allowance

5.23 Table 12 summarises our decision for the ESO's WACC allowance as explained in the previous sections of this chapter.

Table 12: Final Determinations on the baseline allowed[42] return on capital

Price base	Component	Average - five years ending 31st March 2026	Ref	Source
		ESO		
CPIH	Notional gearing	55%	A	Paragraph 5.46
	Cost of equity	7.55%	B	Paragraph 5.8
	Expected Outperformance	0%	C	See Table 11
	Allowed return on equity	7.55%	D	D = B – C
	Allowed return on debt	-0.07%	E	Paragraph 5.3
	Allowed return on capital	3.36%	F	F = A * E + D * (1 – A)

[41] In particular, the pass-through approach to totex is new within the ESO's framework for RIIO-2. At the start of RIIO-2, a similar evaluative incentive scheme with somewhat larger value will have been in operation for three years (see Chapter 2 above).
[42] We present here a forecast of allowed returns. Final allowances for debt and equity will reflect changes in market observations as per the WACC allowance model. Equity values on a post-tax real basis, debt values on a pre-tax real basis.

Additional funding (including the Working Capital Facility)

Description

5.24 In its Business Plan, the ESO made claims for funding of between £13m and £39m above the WACC*RAV allowance. These claims related to various risks, including the ESO's revenue collection role, as well as asymmetric risks such as cost disallowance. In our Draft Determination, we assessed these claims using the methodology set out in our October 2019 decision.[43] Our assessment of the various claims was also supported by a risk taxonomy.[44]

5.25 Alongside our Draft Determination we also decided to reduce the ESO's risk exposure by reallocating Transmission Network Use of System (TNUoS) revenue collection risk from the ESO to onshore Transmission Owners (TOs).[45] We also proposed to further reduce the ESO's risk by applying a cap on totex disallowance of 10% RAV and by removing the RIIO-1 Black Start cost disallowance mechanism.

5.26 To enable the ESO to manage potential cash shortfalls, including those incurred through its revenue collection role, the ESO procures a WCF. The establishment of a separate price control for the ESO for RIIO-2, and the uncertainty around future charging arrangements, raises questions about the appropriate funding arrangements for this WCF. Cost estimates for this facility were captured within our broader assessment of additional funding, reflecting our view on the capital requirements for the ESO, given its role and risk framework. Our Draft Determination analysis was also supported by CEPA's research. On this basis, we proposed additional funding of £1.9m (nominal prices), which included approximately £0.6m for WCF costs.[46]

5.27 In our Draft Determination we asked whether stakeholders agreed that our proposals for additional funding reflected the ESO's role during RIIO-2. We also

[43] See here: RIIO-2 Draft Determinations - ESO https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_eso.pdf#page=84
[44] To support our assessment process, the risk taxonomy allocated ESO's claims into risk categories and applied three tests. See here for further detail: RIIO-2 Draft Determinations – ESO https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_eso.pdf#page=153
[45] Decision on re-allocation of TNUOS Revenue Collection Risk https://www.ofgem.gov.uk/ofgem-publications/164726#page=3
[46] Decision on re-allocation of TNUOS Revenue Collection Risk https://www.ofgem.gov.uk/ofgem-publications/164726#page=82

asked for views on how the ESO should recover its costs for a WCF or whether the implied allowance is sufficiently accurate for the full RIIO-2 period.

Final Determination

5.28 The table below sets out our final decisions on additional funding.

Additional funding	Final Determination	Draft Determination	Applicable period
Additional funding – other	£4.8m per year (nominal prices)	Additional funding of £1.9m (nominal prices) per year. This included an implied allowance of approximately £0.6m for WCF costs which we proposed not to adjust ex-post.	BP1
Additional funding - Working Capital Facility	A pass-through arrangement to fund the efficient and observable costs for the WCF[47]. Estimated at £0.7m-£0.9m, nominal prices.		

Final Determination rationale and Draft Determination responses

5.29 The ESO agreed that the removal of TNUoS cash flow risk will reduce the ESO's risk. However, the ESO disagreed that our proposals for additional funding adequately reflect its role. The ESO argued our proposals result in:

- inadequate provision for the direct costs of the WCF
- inadequate funding for the revenue collection role
- no compensation for asymmetric risk expected losses
- inadequate funding for contingent equity

5.30 In support of its view that £1.9m is too low, the ESO suggested that "[a]djusting the CEPA analysis to incorporate our alternative assumptions indicates that on average over the RIIO-2 period, the range of additional funding should be £12.2 million - £16.8 million."[48] The ESO argued that our Draft Determination proposal to cap disallowance risk at 10% of RAV cannot be considered proportionate. The ESO suggested that 1% of RAV would be more comparable to the exposure faced by networks. In addition, the ESO referred to advice from KPMG[49] which suggests additional funding of £18.6m for:

[47] These will be submitted by the ESO alongside its wider reporting requirements (eg Regulatory Instructions and Guidance in July each year)
[48] The ESO added that this was comparable to additional remuneration for the revenue role and contingent equity in KPMG's report of £14.9m (Contingent capital £1.3m, Revenue collection role £6.7m and asymmetry £6.9m).
[49] We address KPMG's views within the Finance Annex published alongside these Final Determinations (see Appendix 1 consultancy report 17).

- Asymmetry £6.9m
- Revenue collection role £6.7m
- Non-RAV systematic risk £3.7m, and
- Contingent capital £1.3m

5.31 By contrast, Citizens Advice believe that £1.9m of additional funding is unnecessary and that Ofgem is being generous. Another stakeholder suggested that the proposals for additional funding reflect the ESO's role during RIIO-2.

5.32 The RIIO-2 CG believe that the ESO price control has been structured to minimise risk. The RIIO-2 CG refer to low risk in multiple areas as examples, including revenue collection risk, performance risk, cost risk, operations risk, reputational risk, legal risk and regulatory risk. This led the RIIO-2 CG to believe that no additional funding is required.

5.33 Table 13 below reflects our final view for returns on capital. We include RAV returns for completeness (row A) and to improve comparability with ESO/KPMG submissions. Rows B and C capture total additional funding, including WCF costs (within Row B). We describe this table in more detail in the following sections.

Table 13: Return on capital (£m nominal, annual forecast)

Area	DD[50]	FD	ESO/ KPMG[51]	Ref	Source
Nominal WACC return on RAV[52]	13.8	17.0	18.6	A	$= WACC_{nominal} * RAV$
Revenue collection role	1.9	4.1[53]	6.7	B	See Table 14 & paragraphs 5.36-5.37
Asymmetry and other risk claims	0.0	1.5	11.9	C	See Table 14 & paragraphs 5.38-5.40
Return	**15.7**	**22.6**	**37.2**	D	= A + B + C
Additional funding	**1.9**	**5.6**	**18.6**	E	= B + C

5.34 Before arriving at our final view for additional funding of £5.6m (including a £4.8m ex ante allowance and an estimated £0.8m of WCF pass-through costs), we

[50] For further information on values in the Draft Determination column, see Draft Determinations for the ESO (July 2020).
[51] Based on KPMG's advice to ESO as per paragraph 5.30 above: £6.7m (revenue collection role) and £11.9m (Asymmetry, £6.9m + non-RAV systematic risk, £3.7m + Contingent capital, £1.3m).
[52] £18.6m based on a nominal WACC of 5.97% (a real WACC of 3.88% converted to nominal: (1+3.88%)*(1+2.02%)-1) and a RAV estimate of £312m as per footnote 56 below. This reflects: a real equity return of 8.7% in line with ESO's view (capturing a 0.6 asset beta as per paragraph 5.13 above), a real debt return of -0.07%, and 55% notional gearing. DD and FD values calculated in a similar way, using real WACC return of 2.35% (see Draft Determinations, Table 27) and 3.36% (FD, as shown above in Table 12).
[53] This figure includes an estimated £0.8m of pass-through costs to fund the efficient and observable costs of the WCF.

considered a range for each of the ESO's claims, based on the possible quantum of, and return on, each layer of capital. Our estimates are shown in Table 14 below.

Table 14: Additional funding - capital and return ranges (£m nominal, annual forecast)

Area	Low Capital	High Capital	Low Return	High Return	Row	Source(s)
Revenue collection role - equity	17	52	1.6	5.1	A	ESO & paragraphs 5.36-5.37[54]
Revenue collection role - debt	149	208	0.7	0.9	B	ESO & paragraphs 5.36-5.37
Asymmetry	small	8	small	1.6	C	ESO & paragraphs 5.38-5.39
Contingent capital	small	small	small	small	D	Paragraph 5.40
Other claims	small	small	small	small	E	Paragraph 5.40
Approximate totals	**172**	**268**	**2.3**	**7.6**	**F**	**= A+B+C+D+E**

5.35 Together, rows A and B suggest a mid-point of £4.1m for the revenue collection role including WCF costs. To reflect rows C, D and E, and to recognise some uncertainty in A and B, we added a further £1.5m to reach £5.6m, which is towards the high end of the estimated range. Our decision reflects an in-the-round assessment, including beta issues as these are not easy to isolate. In the following paragraphs we provide an explanation of how we weighted the evidence to arrive at £5.6m.

5.36 For the revenue collection role, we re-considered the equity proportion that could be needed. Our Draft Determination assumed that the capital required for the revenue collection role would constitute approximately 10% equity and 90% debt. On reflection, a 10% level of equity could be difficult for a notional ESO to obtain. We therefore considered higher levels of equity, of up to 20%. Table 14 uses the capital range of £165m (low) to £260m (high), as per Draft Determinations, and applies the assumed capital splits, 10% equity (low) and 20% equity (high). In response to the £165m to £260m assumption, ESO agreed "this could be an appropriate range once the RIIO-2 arrangements are embedded". As a sensitivity, we also tested higher levels of capital. The return on debt reflects WCF costs of 0.45% in line with ESO's view.

[54] Low and high equity returns include inflation impact: (1+7.55%)*(1+2.02%)-1. For simplicity we assume a full equity return, ignoring any deposit value.

5.37 Overall, our Final Determinations reflect the view that there is legitimacy in ESO's claim that its revenue collection role warrants additional funding. We therefore agree that there are underlying costs and risks that should be remunerated. However, we disagree on how an efficient quantum of funding should be estimated. The ESO continue to suggest a margin-on-revenues approach, in line with CMA's SONI precedent, whereas we prefer a return-on-capital approach, in line with CMA's energy market investigation precedent[55]. It appears to us that a return-on-capital approach can better reflect the underlying costs and risks. By contrast, a margin-on-revenues approach assumes a constant relationship between the quantum of revenues collected and the underlying costs and risks.

5.38 Regarding asymmetry, we decided to reduce annual DIWE exposure from our Draft Determination proposed 10% of RAV cap, to a 2.5% of RAV cap (ie a cap of approximately £8m, assuming a RAV of ~£312m)[56]. On any reasonable grounds, this reduces the ESO's downside exposure materially and goes a long way towards ESO's suggested cap (1% of RAV). This change explains approximately £10m of the difference between the columns in Table 13 (FD v ESO/KPMG). Reflecting this, the high end in Table 14 assumes a 20% probability of a £8m loss. We also re-considered whether the framework is asymmetrical overall, given the net impact of the incentive scheme and disallowance risks. The low end in Table 14 assumes that the asymmetric incentive upside (+£9m given the incentive range of +£15m to -£6m) offsets the DIWE downside (-£8m), and that a DIWE loss probability could be much smaller than 20%. We consider it prudent to recognise that there may be a realistic perception on behalf of investors that the DIWE downside of -£8m is more probable than the asymmetric upside of +£9m[57] from the incentive scheme.

5.39 As emphasised elsewhere in this document, we have designed the price control so that it focuses more on the delivery of outputs, rather than costs, and we see disallowance (of DIWE) as a backstop measure. However, we recognise that the price control framework is new and the lack of a totex incentive is untested. We therefore accept that it is possible investors may have a different perception of disallowance risk than we do, and it may take time and experience for this perception to change. For Final Determinations, we therefore consider that there may be a perception of net asymmetry which we have factored into our decision.

[55] CMA Energy Market Investigation https://www.gov.uk/cma-cases/energy-market-investigation
[56] See row 12 of "Financial Statements" in ESO LiMo. Average closing RAV for first two years of RIIO-2. Nominal prices
[57] By asymmetric upside, we refer to the larger upside than downside within the incentive range of +£15m to -£6m.

We expect experience with the framework will enable us to revisit this view, and we may consider changes to additional funding alongside future Business Plans. For the avoidance of doubt, our assumptions here are specific to the circumstances of the ESO and its new price control.

5.40 Other claims for additional funding, such as non-RAV systematic risk and further assumptions for contingent capital, were not particularly persuasive, in our view. We therefore believe the underlying risks are either small or a double count of other claims, such as those captured in beta, revenue collection or asymmetry.[58] For these reasons we did not put material weight on these in arriving at £5.6m.

5.41 Given the uncertainty of the underlying estimates, the changing nature of the ESO's role and the lack of precedent for the underlying risks, we have decided that these additional funding decisions should apply to the two-year BP1 period rather than the full five years of RIIO-2. This will allow for reconsideration in due course, with the benefit of additional information. We discuss some areas of uncertainty that may impact additional funding in Chapter 7.

5.42 The ESO argued that our proposal for an ex ante allowance (of ~£0.6m) to cover costs associated with the WCF does not adequately compensate the ESO for the costs it will incur. The ESO considers that an allowance of £0.7m for each of the first two years would be needed to cover costs. The ESO suggested that allowances thereafter should be set through an uncertainty mechanism, to reflect its changing requirements under TNUoS and BSUoS.

5.43 The RIIO-2 CG believe that the ESO should be able to recover the costs it will incur, including set up costs, interest costs, and other costs of a WCF of an appropriate size. To the extent that the ESO also incurs guarantee costs with National Grid, the RIIO-2 CG consider that these should be funded. The RIIO-2 CG suggested funding should be on a pass-through basis.

5.44 We have re-considered whether the benefits of a pass-through approach could outweigh potential drawbacks discussed in Draft Determinations.[59] We note support from the RIIO-2 CG for a pass-through arrangement. We agree that it could provide benefits, eg consistency with the wider pass-through approach to

[58] For further information, we refer to the risk taxonomy from Draft Determinations and the three associated tests: our final view remains in line with this.
https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_eso.pdf#page=153
[59] RIIO-2 Draft Determinations – ESO
https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_eso.pdf#page=85 Paragraph 5.48.

the ESO's costs, visibility on the incurred costs for a WCF and the ability to closely remunerate efficient costs based on outturn information. Given the very small relative magnitude of WCF fees, we also do not believe a pass-through creates any material risks for consumers. We therefore decided to implement a pass-through approach for all efficient costs of the WCF. We estimate this to be around £0.8m per year.

Financeability

Description

5.45 At Draft Determinations we published a licence model for the ESO alongside a CEPA report which addressed financeability issues. Both documents supported our view that the proposed funding and financing arrangements allow the ESO to efficiently finance its activities.[60] We agreed with the ESO's view that financeability tests indicate strong credit worthiness. We also noted the ESO's arguments on 'equity financeability' and the view that such a concept may be generally inseparable from the ESO's additional funding claims.

Final Determination

5.46 The table below captures our final views on financeability.

	Final Determination	Draft Determination	Applicable period
Notional gearing	55%	Same as Final Determination	RIIO-2
Financeability	We consider that the funding and financing arrangements allow the ESO to efficiently finance its activities.	Same as Final Determination	

Final Determination rationale and Draft Determination responses

5.47 The ESO agrees that it has strong credit metrics and that it can therefore service the debt used to finance the RAV. However, the ESO also argues that the proposed arrangements do not allow the ESO to efficiently finance its activities, because the equity proposition is inadequate and encourages risk-averse, cautious behaviours. The ESO continued to consider that earnings before interest and taxes

[60] RIIO-2 Draft Determinations – ESO
https://www.ofgem.gov.uk/system/files/docs/2020/07/draft_determinations_-_eso.pdf#page=87

(EBIT) margins are a relevant cross-check and noted that an earnings before interest, taxes, depreciation, and amortization (EBITDA) margin would add back depreciation which would mean the thresholds would be higher than 10%.

5.48 The ESO referred to advice from KPMG in support of its views on financeability. We address KPMG's views within Appendix 1 (see consultancy report 17) of the Finance Annex.

5.49 Citizens Advice agreed with the ESO that financeability tests indicate strong credit worthiness. The RIIO-2 CG believe that the ESO's plan is financeable on both a notional and actual basis without mitigating actions, based on the proposed cost of capital allowances and without any additional funding.

5.50 Our Final Determinations provide higher values of additional funding and equity allowances, alongside lower levels of risk exposure. We believe that these changes will alleviate any concerns regarding the ESO's ability to finance its activities.

5.51 The ESO's concerns focus on equity financeability, particularly with regards to obtaining a 10% EBIT profit margin. The use of EBIT by the ESO has several weaknesses, and we highlighted in Draft Determinations the impact of depreciation as a relevant consideration. We also consider that there are other issues with an undue focus on EBIT, including:

a) Moody's use of different profit definitions, for example EBITDA[61], EBITA[62] or operating profit.[63] We find that Moody's:

- do not focus exclusively on EBIT, and therefore it is difficult to see a reliable precedent for ESO's target of 10% EBIT for baseline funding
- place only 10% weighting on EBITDA, EBITA and operating margins, and therefore it is difficult to see how strongly a 10% EBIT target should be weighted in an 'equity financeability' assessment in the absence of an independent benchmark.

5.52 The ESO's target of 10% EBIT margin relies heavily on KPMG's adjustment 'from EBITDA to EBIT'. KPMG infer an EBIT margin by adjusting EBITDA margins based on profit observations from two other sectors:

[61] "Diversified Technology" rating methodology (2018)
[62] "Business and Consumer Service Industry" rating methodology (2016)
[63] "Distribution & Supply Chain Services Industry" rating methodology (2018)

a) Industrial and Commercial Services
b) Software and IT services, using a median and mean difference between the margins.[64]

5.53 Given the judgement involved to reach a 10% EBIT margin, we remain sceptical of placing undue weight on such inferences, and therefore remain unconvinced that 'equity financeability checks' have yielded material insights for the ESO. Our final view for additional funding however does close some of the gap that the ESO believed existed.

5.54 To support of Final Determinations on financeability, we publish an updated ESO Licence Model (LiMo) alongside this document.

[64]ESO RIIO-2 Business Plan Annex 5 – Finance report https://www.nationalgrideso.com/document/158076/download#page=108

6. Innovation

6.1 We set out below our Final Determinations on the ESO's RIIO-2 Network Innovation Allowance (NIA) funding. The Core Document details our Final Determinations on the wider framework arrangements for the RIIO-2 NIA framework and the Strategic Innovation Fund.

Network Innovation Allowance

Purpose: to fund innovation relating to the energy system transition and/or support for consumers in vulnerable situations.

Benefits: the NIA will enable companies to take forward innovation projects that have the potential to address consumer vulnerability and/or deliver longer–term financial and environmental benefits for consumers, which they would not otherwise undertake within the price control.

Final Determination

Network Innovation Allowance	ESO proposed NIA (£m)	Final Determination (£m)	Draft Determination (£m)	Applicable period
Level of NIA funding	45 (2021-2026)	20.7 (2021-26)	7.2[65] (2021-23)	RIIO-2, with opportunity to increase after BP1
Associated conditions	n/a	Condition that ESO-led NIA projects must involve partnership with other network companies, third party innovators and/or academics.	Same as Final Determination	RIIO-2

Final Determination rationale and Draft Determination responses

6.2 We have decided that all network companies and the ESO will be able to access NIA funding during RIIO-2, as they have suitably evidenced that an improved industry-led reporting framework will be in place for the start of RIIO-2 (see Chapter 8 of the Core Document).

[65] This was conditional on an improved industry-led reporting framework.

6.3 We have decided to award the ESO five-year NIA funding, totalling initially £20.7m. This is a change from our Draft Determination proposal, after considering feedback from the thirteen responses to the question on the ESO's NIA funding.

6.4 Within these responses, there was consistent feedback from network companies, third party innovators, academics and suppliers that two-year NIA funding would undermine the ESO's collaboration with others. The ESO agreed with our approach to setting its NIA allowance, but similarly disagreed with our proposal to award a two-year allowance and reiterated its request for a five-year NIA. We note this feedback and recognise that one of the objectives of NIA funding is to support collaboration. We do not wish to undermine such collaboration and have decided to award the ESO NIA funding for five years. In contrast to RIIO-1, there is no annual cap on the NIA spending in RIIO-2, therefore the ESO will have flexibility to spend these NIA funds when appropriate.

6.5 Within its Business Plan, the ESO profiled NIA spend of £11.7m for year 3, £12.6m for year 4 and £13.5m for year 5. However, within Draft Determination responses, there was no specific comment on how much NIA funding the ESO should be awarded in years 3-5.

6.6 As set out in our Draft Determination, we propose to award the ESO the level of innovation funding it profiled for the first two years of RIIO-2. Given the uncertainty of planned innovation activities in years 3-5 and the need to link innovation activities to wider business activities, we think it is appropriate to increase the ESO's NIA funding to £20.7m, an increase of £13.5m (equivalent to £4.5m/year for year 3-5) from our Draft Determination proposal. This is higher than the level of NIA funding the ESO received in RIIO-1 and will provide certainty to be able to plan innovation activities over five years. It is lower than the amount the ESO requested for the final three years, but we are clear that the ESO may request additional NIA funding for years 3-5 in BP2, with more details of planned innovation activity and evidence of how these activities will build upon wider activities within their wider Business Plan.

6.7 Although some responses believed our proposed condition that all of the ESO's NIA projects must involve partnership with other network companies, third party innovators and/or academics could overcomplicate NIA funding, we note that the ESO agreed with this provision. We also continue to think the ESO's position within industry means that their innovation activity should always involve external partnerships. Therefore, we have also decided to confirm this requirement.

7. Uncertainty

Sector specific approach to ESO price control uncertainty

7.1 In Chapter 7 of the Core Document, we set out five types of mechanisms for dealing with uncertainty throughout the RIIO-2 price control: volume drivers, re-opener mechanisms, pass-through mechanisms, indexation and use-it-or-lose-it (UIOLI) allowances. These measures are in most cases more applicable to the network companies' price controls.

7.2 Our evaluative approach to incentives on outputs and costs, combined with shorter Business Plans, means the price control is designed to accommodate uncertainty and the influence of external factors. We therefore do not have any volume drivers, mechanistic cost re-openers, or totex indexation measures for the ESO. We do however use certain financial uncertainty mechanisms for the ESO, such as indexation of the RAV, which are discussed further in the Finance Annex. Like the other sectors, we also make use of pass-through mechanisms for certain costs that the ESO cannot reasonably influence.

7.3 As discussed in Chapter 4, we may update the ESO's incentive cost benchmark within BP1 in response to updated information for certain IT projects. We will also review the cost benchmark as part of the cyber resilience IT reopener at the start of RIIO-2, which is discussed further in Chapter 7 of the Core Document.

7.4 In our Draft Determination, we highlighted our intention to consider adjustments to the price control when there are material changes to the ESO's roles or responsibilities within a Business Plan period. We highlighted the ESO's potential future responsibilities in early network competition and offshore coordination, as well as its management of BSUoS charges, as examples of situations where adjustments to key parameters may be needed.

Final Determination

7.5 Our overall approach to managing uncertainty through the price control is unchanged from our Draft Determination. However, as set out elsewhere in this document, we have made changes to specific polices to better accommodate future uncertainties. The key changes are:

- we have decided to review the ESO's additional funding, and disallowance of DIWE cap, after BP1
- we have decided to treat WCF costs as a pass-through cost rather than a fixed allowance.

7.6 Throughout this document we highlight the period over which a policy decision applies for (typically either BP1 or RIIO-2). The main exception to these decision periods is that we may revisit the ESO's Delivery Schedule, performance measures and cost benchmark in response to material changes to the ESO's roles, responsibilities or structure within a Business Plan period. This could include material changes that, for example, satisfy one or more of the following conditions:

- substantial new or removed responsibilities that are underpinned by additional licence conditions
- substantial new or removed responsibilities that change expected annual costs by more than around 5% of the ESO's annual cost benchmark per role
- changes to roles or governance structures that require the ESO to set up new functions and/or materially change its approach to investment.

7.7 Table 15 outlines our current view on future uncertainties or changes which may merit adjustments to key price control parameters. We also set out the expected timing of potential adjustments where this is known.

Table 15: List of potential adjustments to the ESO's price control

Area	Details	Elements we expect to be impacted	Current expected timing
RIIO-2 cyber reopener	The ESO must submit an IT cyber resilience plan during the first reopener of the RIIO-2 price control. This application should specifically target the CNI and IT-OT boundary scope under Cyber and articulate how the allowances provided will be used throughout RIIO-2 and any additional allowance requests for the RIIO-2 price control.	Cost benchmark	Start of RIIO-2
ESO's roles in early network competition and offshore coordination	There may be an expansion of the ESO's roles and responsibilities in Role 3 before BP2.	Delivery Schedule, performance measures, and cost benchmark	Before April 2022

Area	Details	Elements we expect to be impacted	Current expected timing
BSUoS reforms	Industry has proposed changes to charging arrangements that potentially increase cashflow risk on the ESO. This could also lead to the consideration of new arrangements that could move cash flow risk from the ESO to another body. As a result, funding may need to be increased or decreased.	Additional funding	April 2023
Experience with disallowance of DIWE	Our decision on additional funding reflects some uncertainty that the ESO and investors may have around an untested set of arrangements, including how we might apply disallowance of DIWE. Based on experience with actual disallowance, adjustments to funding may be merited. Likewise, we may choose to change the cap if evidence suggest this would be in consumers' interests. Any changes to the cap would be considered alongside the appropriate funding.	Additional funding, cap on disallowance of DIWE	Start of BP2
National Grid shared IT model	As discussed in Chapter 8, we currently see a strong case for the separation of ESO IT from National Grid's shared IT function. If changes are made in this area in the future, depending on the timings, there may need to be changes to the funding for the ESO, NGET and NGGT.	Cost benchmark, rules for shared cost allocations	Unknown
Changes to system operator governance framework	Our RIIO-2 decisions are based on the current governance framework for the gas and electricity system operators. In February 2020, we announced an accelerated and expanded review of GB system operation. This review will provide the government with advice on whether we have the right governance framework in place to deliver the UK's Net Zero emissions target at lowest cost to consumers. If this review (or any subsequent review) results in the government deciding to make changes to the current model for system operators, then we may need to reconsider the suitability and effectiveness of RIIO-2 price control arrangements for any affected companies, which could lead to key parameters of the settlement being adapted.	All arrangements	Unknown

Final Determination rationale and Draft Determination responses

7.8 We received limited responses on this topic, but those that did respond mostly agreed the price control design is sufficiently flexible to account for uncertainty. They also agreed it would be sensible to reconsider the ESO's additional funding in response to potential changes in BSUoS charging risk. No respondent suggested other missing future uncertainties.

7.9 The ESO did not agree that our price control design was sufficiently flexible. It agreed that we should update the cost benchmark, Delivery Schedule and performance measures for new and expanded roles. However, it considered our approach to updating the additional funding element of the price control involved too much judgement. The ESO gave early competition as an example of a new role where it was unclear how it might receive increases in the additional funding allowance.

7.10 We do not believe it is possible to perfectly determine what changes to additional funding might be needed in response to material changes to the ESO's roles. For example, there are qualitative and inter-relating issues that need to be considered during any consideration of additional funding.

7.11 Whilst we expect that changes to cashflow risk may merit the reconsideration of additional funding for BP2, we do not currently see evidence that potential new roles such as early competition or offshore coordination are likely to materially change the ESO's risk profile. Conversely, we expect that experience with the new price control may help to reduce perceptions associated with disallowance risk for all roles. This may change our view on credible perceptions of asymmetric risk, which could justify a future reduction in the additional funding.

7.12 The ESO also argued that to account for future potential changes to BSUoS, we should remunerate its risk by applying a margin to BSUoS. We disagree with a margin approach for the reasons discussed in Chapter 5. With regard to future uncertainty, we do not see how setting a fixed margin on BSUoS is a sensible way to deal with uncertainty on revenue collection risk as this would be less responsive to structural changes such as those suggested by the BSUoS Task Force.

7.13 Another respondent commented that an obligation should be placed on the ESO to formally consult stakeholders on associated changes such as additional deliverables and outputs. We think an obligation of this nature risks limiting the ESO's ability to respond quickly to new developments. Instead, we believe the ESO will have incentive to engage with its stakeholders on significant changes to its plans within BP1 on an ongoing basis, as stakeholder satisfaction forms part of its performance evaluation. For BP2, we expect to confirm that the ESO should formally consult on a draft version of the Business Plan when we publish our updated Business Plan Guidance next year.

8. Other cross-cutting issues

Introduction

8.1 This section sets out updates and next steps on six cross-cutting issues, outlined in Table 16.

Table 16: Updates on other cross-cutting issues

Area	Update on next steps
Governance of ESO IT	We continue to hold concerns over the current shared IT model and we currently see a strong case for full ESO IT autonomy. Given the complexity of this issue, and recognising the links with our wider review of system operator governance arrangements, we now intend to progress this issue outside of RIIO-2
EMR ring fence	Will are maintaining the ring fence arrangements for now but will keep this under review.
Cost recovery	We will take forward changes to certain cost recovery terms into the RIIO-2 licence statutory consultation. However, we are not making a decision to change the timing of the recovery of the ESO's internal costs, to ensure consistency with potential future changes to the BSUoS charging arrangements.
Regulatory reporting	We will issue new RIGs for the ESO next year, streamlining existing requirements where appropriate.
Future business plans	We will publish a guidance document next year setting out the precise requirements and timings for BP2.
Requirements on ESO to facilitate TO incentives	We intend to introduce a new licence obligation for the ESO to support the SO-TO Optimisation ODI trial outlined in Chapter 2 of the ET Annex.

Governance of ESO IT

Description

8.2 In April 2019, the ESO became a separate entity from NGET. As part of the separation, National Grid Group continued to provide some functions to the ESO (and other subsidiaries of the National Grid Group) as a shared service. As we move into RIIO-2, we need to ensure that those shared services are still appropriate for the ESO.

8.3 The shared service which has the most material impact on the ESO's quality and cost of delivery is National Grid Group's shared IT function. The ESO's strategic goals are underpinned by new investment in IT, and for BP1, IT-related expenditure forms over 60% of the ESO's total costs. The current shared model

means that all IT (including ESO-only IT) is procured and delivered by National Grid Group. The ESO developed its Business Plan on this assumption and it did not explore any alternative approaches.

8.4 Prior to the Business Plan submission, stakeholders raised concerns about the ESO's reliance on the shared IT model. The RIIO-2 CG noted that the ESO's IT relationship with National Grid Group could constrain the ESO's ability to deliver its planned IT solutions. The ERSG emphasised the need for IT expertise, capability, and intellectual property to be retained as part of the ESO and not by external providers or held within National Grid Group.

8.5 We shared these concerns and, at Draft Determinations, asked the ESO to develop a plan for the full separation of ESO IT by April 2023. We also asked the ESO to develop any alternative options it believed could address the concerns identified and be more beneficial for consumers (including different timeframes and degrees of separation). We asked stakeholders whether they agreed with our assessment and concerns with the existing IT model, whether they agreed that the ESO should have full control of its IT and whether they had views on the appropriate timing for any future changes.

Update and next steps

8.6 We have reviewed the plans and options submitted to us by the ESO on 9 October. We continue to hold concerns over the current shared IT model and based on the evidence currently before us we see a strong case for full ESO IT autonomy, delivered to an appropriate timetable. We consider that under any ESO governance structure, an autonomous IT function for the ESO is desirable and key to the ESO delivering its longer-term Net Zero ambitions.

8.7 However, we recognise the relative complexity of this issue and the importance of delivering the right solution for the future system operator. We are reviewing the role and governance of the ESO and making recommendations to government, and potential changes to the status quo may emerge over the coming months. Therefore, we consider this is not the right time to make a firm decision on ESO IT autonomy. It may be sensible to take this decision within a wider reform programme for the ESO.

8.8 Within this Final Determinations document we set out our decisions on a cost benchmark for the ESO, and in our other Final Determinations we set totex

allowances for NGET and NGGT. These decisions are based on the current shared IT model. Our pragmatic approach to funding should not imply our permanent acceptance of that model.

8.9 We are aware that National Grid businesses and the ESO will be making substantial investments in the coming months within the existing shared IT services model. We intend to work closely with the ESO and National Grid before RIIO-2 commences, to ensure that any such investments are future-proofed against credible future scenarios and do not become a barrier to any future IT autonomy for the ESO, and to understand any impact of this on Business Plans. We propose to work collaboratively with the ESO and National Grid to achieve this but reserve the option to consult on and implement new regulations to achieve this outcome. In particular, we will review our approach by early summer 2021 in the light of any progress to wider reforms.

Final Determination rationale and Draft Determination responses

8.10 Most respondents agreed with the concerns raised in our Draft Determinations and supported a move to a fully independent ESO IT delivery model. There were mixed views on the appropriate timing. Some respondents felt this should happen as soon as possible, others agreed with April 2023, whilst several expressed concerns that a two-year timescale could disrupt the delivery of the ESO's BP1 outputs and investments. The ERSG suggested further thinking may be needed on the appropriate timescales and a more gradual move considered.

8.11 The ESO's submission included options for:

- full separation of ESO IT by 2023
- an alternative plan for full IT separation by 2026
- an alternative model which achieves partial separation of ESO IT by 2022 and retains National Grid Group ownership and control of security, infrastructure and operations services.

8.12 The ESO commented that implementing IT autonomy by 1 April 2023 would present an unacceptable level of risk and cost to consumers and National Grid Group does not support any form of further IT separation on the basis of operational security and value to consumers.

8.13 On assessing the further information and consultation responses, we still consider that the status quo shared IT model does not support consumers' interests for the reasons outlined in our Draft Determinations. Our initial view of the ESO's alternative proposed shared IT delivery model is that it is also unlikely to sufficiently address these concerns. We recognise that the implementation details of any changes, particularly the appropriate implementation timeline, need careful consideration. We therefore believe it is important to further consider this issue, including for the reasons set out above.

EMR ring fence

Description

8.14 Upon establishing the ESO's role as the EMR DB, we introduced business separation and a ring fence between ESO and the EMR DB to mitigate conflicts of interest. The practical implications of this ring-fence included:

- an administrative and physical separation of staff, restrictions to the flow of data and information
- the establishment of a data handling team for Confidential EMR Information purposes
- a compliance code and non-disclosure agreements for staff.

8.15 As discussed in our Five-Year Review report[66], the legal separation of the ESO from NGET may enable a review of the current ring fence arrangement.

8.16 In our Draft Determinations we asked stakeholders whether we should maintain this ringfence for RIIO-2.

Update and next steps

8.17 We have decided to maintain the ring-fence arrangements, but we will keep this under review.

[66] See: Report on our Five Year Review of the Capacity Market Rules and Forward Work Plan https://www.ofgem.gov.uk/publications-and-updates/report-our-five-year-review-capacity-market-rules-and-forward-work-plan

Final Determination rationale and Draft Determination responses

8.18 We received mixed responses on this topic. Of the eight responses received, four explicitly opposed the proposal to maintain the ring fence. They did not consider the ring fence to be appropriate given the legal separation of ESO from NGET in 2019.

8.19 The ESO opposed this proposal, noting that the ring fence inhibits certain efficiencies between the ESO and the EMR DB. The ESO is of the opinion that the incentives framework integration, by itself, does not offer any wider benefits. The ESO believes these benefits would be achieved through a review of the ring fence between the EMR DB and the ESO.

8.20 However, of the remaining four responses, two agreed with our proposal to maintain the ring fence. One respondent added that maintaining the ring fence retains the option of other bodies performing the role of the EMR DB in future. The RIIO-2 CG agreed with our proposal, adding that Ofgem should keep the ring fence arrangements under review. The remaining respondents do not explicitly agree nor disagree with our proposal, and instead question the necessity of the ring fence, and added that the arrangements should be reviewed.

8.21 We are maintaining our Draft Determination position to retain the existing ring fence arrangements. We do not believe that sufficient material evidence was provided to convince us of the contrary in the responses to our Draft Determination.

8.22 Where the ring fence arrangements prohibit certain efficiencies between the ESO and the EMR DB, we will use the current mechanisms in place whereby the Authority, where presented with a case justified with sufficient evidence, may provide written consent to the EMR DB to carry out specific functions and utilise these efficiencies.

8.23 We are maintaining our Draft Determination position to keep the ring fence arrangements under review, therefore allowing the possibility of a comprehensive review into these arrangements in future. The ESO was in favour of the arrangements remaining under review, and it aims to revisit its position and provide a more comprehensive proposal for the removal of these arrangements to the Authority in future.

Cost recovery

Description

8.24 The ESO predominantly recovers its costs, including its internal and external costs, through BSUoS charges. It also currently recovers some other costs, including innovation costs and pass-through items, through TNUoS charges. Table 17 summarises the cost recovery arrangements for RIIO-1.

Table 17: Recovery method of ESO costs during RIIO-1

Revenue category	Cost included	RIIO-1 Charge	RIIO-1 recovery method
Internal costs	Costs the ESO incurs to run its business.	BSUoS	Annual allowance determined at the start of the price control, with any under/overspend against this allowance adjusted in future years with a two-year lag.
External costs	Balancing costs: payments made to balancing service providers to procure and use balancing services.	BSUoS	Based on costs incurred within the year. Adjusted by the ESO throughout the year.
	Incentive payments or penalties	BSUoS	Recovered by the ESO within-year based on its forecast performance. Allowed revenues for the following year are then adjusted to account for any differences between forecast and actual performance for the previous year.
	SO-TO costs: payments made to TOs for changes to outages or other commercial services.	BSUoS	A fixed annual allowance in the licence. Where the ESO spends less or more than allowance by more than a certain threshold (£300k), it must submit an 'outage cost adjusting event' to Ofgem for approval.
Innovation	NIA	TNUoS	Use it or lose it allowance, recovered based on actual expenditure up to the allowance value.
Pass-through items	Business rates, licence fees and inter-transmission system operator compensation (ITC) mechanism.	TNUoS	Based on actual costs incurred, on a two-year lag.

8.25 In our Draft Determinations we asked for views on changes to the way different costs items were recovered, including:

- reclassifying incentive payments as internal costs rather than external costs
- recovering NIA and business rates through BSUoS rather than TNUoS
- changing the recovery of SO-TO costs from a fixed allowance
- changing the recovery of internal costs to make this more like external costs.

Update and next steps

8.26 In our statutory RIIO-2 licence change consultation, we plan to take forward proposed licence changes to reclassify incentive payments as internal costs, recover the ESO's NIA and business rates through BSUoS rather than TNUoS and align the recovery of SO-TO costs with other costs. Our statutory consultation will also factor in the detailed comments received on this issue as part of our informal RIIO-2 licence change consultation in September 2020.

8.27 We have decided not to progress changing the timing of the recovery of the ESO's internal costs at this time. Instead, we will keep the Annual Iteration Process (AIP)[67] for the ESO under review to make sure that it does not create unintended consequences and is consistent with the direction of travel for BSUoS reforms.

Final Determination rationale and Draft Determination responses

8.28 We are maintaining our Draft Determination positions on incentive payments, NIA, business rates and SO-TO costs, as no parties raised any concerns on these.

8.29 The ESO supported the principle that it should recover its anticipated internal expenditure in the year as opposed to a value fixed at Final Determinations but noted that any future decisions on BSUoS charge setting could impact this. One stakeholder suggested more dynamic forecasting would put a focus on the ESO to ensure accurate forecasting, whilst another considered funding should be lagged.

8.30 Since the publication of our Draft Determinations, the BSUoS Task Force has published a recommendation on changes to the recovery of BSUoS.[68] This recommends that BSUoS should become a fixed charge with a notice period of 14/15 months, from April 2023. We consider it is sensible to pause decisions on the recovery timing of ESO internal costs to ensure we do not introduce changes now that could be incompatible with the future direction of BSUoS arrangements.

[67] Our decisions on the AIP process for all companies are outlined in the Finance Annex.
[68] Second Balancing Services Charges Task Force Resources http://www.chargingfutures.com/charging-reforms/task-forces/second-balancing-services-charges-task-force/resources/

We will retain an ability to make changes to the AIP process in future if we identify any unintended consequences for ESO behaviour.

Regulatory reporting

Description

8.31 Under RIIO-1, the ESO has various reporting requirements. This includes:

- annual reports on the ESO's revenues, financial performance and its costs and outputs in Regulatory Reporting Packs (RRPs)
- monthly, quarterly, bi-annual and annual incentives reports
- various submissions covering the ESO's Data Assurance Guidance (DAG) activities, Black Start procurement and costs, EMR obligations and performance, innovation activity and other obligated reports such as separation compliance.

8.32 In our Draft Determination we asked how the ESO's existing reporting requirements could be streamlined.

Update and next steps

8.33 We have confirmed key reporting requirements and timings for incentive scheme in Chapters 2, 3 and 4.

8.34 We plan to further consider the ESO's suggestions for streamlined reporting as we finalise our ESORI Arrangements Guidance and the ESO's RIGs next year. We will focus on ensuring cost reporting is proportionate and that there is no unnecessary duplication between ESORI reporting and the RRP. We will also seek to remove redundant RIIO-1 RRP requirements.

Final Determination rationale and Draft Determination responses

8.35 We only received a consultation response from the ESO. The ESO's main comment was that it believed the proposed frequency of feedback, scores and financial outcome decisions on incentives is not sufficient to merit the frequency and extent of reporting. It provided several suggested changes, including reporting on deliverables every six-months, and stakeholder satisfaction and consumer benefits annually. The ESO also suggested reducing cost reporting burden, in particular by

avoiding unnecessary duplication between VfM incentives reporting and reporting in the RRP.

8.36 As outlined in Chapter 2, we have decided to evaluate the ESO's performance every six months. The Performance Panel and us will need to have all the information required to perform this evaluation. We therefore have not taken forward the ESO's suggestions for less regular incentives reporting. We understand from further engagement with the ESO that it is happier to provide more reporting where this results in meaningful feedback.

8.37 We agree that it is sensible to streamline existing RIIO-1 requirements where possible, and to avoid duplication between incentives reports and the RRP. We will aim to do this through our finalisation of the ESORI Arrangements Guidance and RIGs next year.

Future business plans

Description

8.38 Our five-year RIIO-2 price control contains a default two-year Business Plan period for the ESO. We need to confirm the timings and process for BP2 which begins in April 2023. In our Draft Determinations we asked stakeholder for views on the appropriate timings for BP2.

Update and next steps

8.39 We intend to publish new Business Plan guidance for the ESO next year which will set out:

- guidance on the contents and duration of BP2
- the confirmed dates for the submission and determinations for BP2 (indicative timings are in Table 18).

Table 18: Indicative timings for BP2

What	Indicative Timings
ESO publishes and consults on draft Business Plan	April 2022
ESO publishes final Business Plan	August 2022
Ofgem Draft Determinations	November 2022
Ofgem Final Determinations	March 2023

Draft Determination responses and rationale

8.40 Several stakeholders agreed with our proposed timings for BP2, stating that the timelines indicated would provide sufficient time for the ESO to engage with stakeholders. The ESO, whilst agreeing with a shorter timeframe than under BP1, did not think the proposed timings were sufficient. It thought that the timings would not enable lessons to be learnt from BP1 given the incentive decision will be made after the first two-year cycle has ended. The ESO also subsequently asked for more clarity on what needs to be submitted for BP2.

8.41 We consider that the indicative timeframes should strike a balance between allowing the ESO to reflect on learnings from the previous Business Plan period, while still allowing Ofgem and stakeholders to thoroughly assess the plans submitted. However, we acknowledge that it would be beneficial to outline the precise guidance for BP2 before confirming the timings. We will confirm the exact timings for BP2 next year alongside new guidance. This will enable us to base our decision on our experience during BP1 and fully develop the requirements expected before confirming the timings for BP2.

Requirement on the ESO to support TO incentives

Description

8.42 As outlined in Chapter 2 of the ET Annex, we have decided to introduce a trial financial incentive on electricity TOs to work with the ESO to reduce constraints costs (the SO:TO Optimisation ODI-F).

8.43 This incentive requires the ESO to provide information to the Authority in line with a Governance Document which we will aim to consult on prior to April 2021. The requirements will include at least the following:

- during the trial, the ESO will calculate the ex ante forecast constraint savings provided through the solutions delivered by the TO
- following the trial, the ESO will report to us their assessment of the benefit delivered through the ODI-F.

Update and next steps

8.44 We intend to introduce a new licence condition in the ESO's licence to require provision of information and support this incentive, in line with the Governance Document. We will consult on this condition in our RIIO-2 statutory licence change consultation.

Final Determination rationale and Draft Determination responses

8.45 We did not consult on the ESO's role in the ODI-F at Draft Determinations as we proposed to reject it. Wider discussion of consultation responses to our Draft Determination position is in Chapter 2 of the ET Annex.

8.46 We have since worked with the TOs and ESO to define the trial ODI. The ESO has been happy to facilitate this ODI and did not object to this new condition in our Licence Drafting Working Group in November 2020.

Appendices

List of appendices

Appendix 1 – Grading of the ESO's Delivery Schedule

This appendix sets out our final grading of the ESO's two-year Delivery Schedule, performed in line with the methodology set out below. Apart from a change to the scoring parameters (1–5) which are set out below, this method was in line with the method used at Draft Determinations. Its purpose is to provide the ESO with targeted feedback on what it can do to meet and exceed our expectations over the course of RIIO-2. We first graded the ESO's RIIO-2 aims, before then grading the Delivery Schedule for BP1.

The ESO submitted its final Delivery Schedule for BP1 to us in October 2020. Alongside this, the ESO also submitted several supporting documents. These are all published alongside this document as technical annexes, and for reference are named:

- ESO RIIO-2 Delivery Schedule
- ESO RIIO-2 Delivery Schedule – Balancing Roadmap
- ESO RIIO-2 Delivery Schedule – Network Control Roadmap
- ESO RIIO-2 Delivery Schedule – ESO-DSO alignment
- ESO RIIO-2 Delivery Schedule – Updated Role 3 aims
- ESO RIIO-2 Delivery Schedule – Offshore Coordination

Approach to assessment

The first step in our assessment was to grade the ESO's RIIO-2 aims for each of its roles (using our 1-5 scale). For this we considered both the ESO's vision and its medium-term strategies. While each Delivery Schedule and our incentive period is only for the first two-years, grading the five-year plan is designed to create transparency of our assessment and messages. Where a Delivery Schedule can demonstrate that it will make sufficient, tangible progress in delivering the RIIO-2 aims, then it follows that it should receive the same score.

We then considered the ESO's two-year Delivery Schedules for each role. In order to provide a focussed steer to the ESO, we have performed an assessment for each of the activities outlined in Table 5 in Chapter 3. We firstly considered whether the individual deliverables met our minimum requirements. Namely, whether they were specified, time bound, relevant, beneficial for consumers and in line with industry priorities. To inform the latter three of these requirements we considered:

- how ambitious and well defined the ESO's vision and five-year strategy is

- whether the two-year deliverables clearly link to the vision and five-year strategy and make sufficient progress against it
- RIIO-2 CG, the ESO Performance Panel and stakeholder feedback.

We graded the activity with a 'yes' when the deliverables had sufficiently demonstrated the minimum requirements, and 'no' when they had not.

We then performed the second stage of our Delivery Schedule assessment. This assessed the ambition of the overall Delivery Schedule for that activity. We graded each activity as below, meets or exceeds our expectations. This informed an overall rating of 1 to 5 for the role's Delivery Schedule, where:

- 1 = the activities in the Delivery Schedule did not meet the large majority of our expectations under that Role
- 2 = the activities in the Delivery Schedule met some, but not all of our expectations under that Role
- 3 = the activities in the Delivery Schedule met our expectations under that Role, but did not exceed them
- 4 = the activities in the Delivery Schedule met our expectations, and exceeded some of our expectations under that Role
- 5 = the activities in the Delivery Schedule met our expectations and exceed the large majority of our expectations under that Role.

This scoring aligns with the overall incentive scoring for each role. It provides the ESO with an ex ante expectation of our assessment of plan delivery if it delivers the plan on time and to an appropriate standard.

There is no mechanistic link between the first step of the Delivery Schedule grading (minimum requirements) and the second step (expectations). However, where deliverables do not meet our minimum requirements, it is unlikely we would then be able to conclude the Delivery Schedule exceeds our expectations.

Our expectations for each activity will be published in our Roles Guidance Document. This, in combination with the messages in this annex, will help create clarity for the ESO on how it can exceed our expectations.

Summary of assessment

Table 19: Summary of ESO Delivery Schedule Grading

What	Assessment	Final Determination			Draft Determination		
Role		Role 1	Role 2	Role 3	Role 1	Role 2	Role 3
RIIO-2 aims	Ambition (1-5)	5	4	4	5	4	3
Two-year Delivery Schedule	Minimum requirements met (Yes / No)	Yes	Yes	Yes	No	No	No
	Ambition (1-5)	5	4	4	3	3	2

Below we set out our rationale for our scores, first setting out views from the ESO and then our own views.

Assessment of Role 1

ESO's response to our assessment at Draft Determination

The ESO was generally content with our assessment. It committed to providing further details about the specific outputs and outcomes that it intends to deliver by March 2023 and how these will make progress against its RIIO-2 ambition to be able to operate the system carbon free by 2025. It noted that its agile investment programme meant detailed system functionality and milestones would only be available on a rolling basis. The ESO subsequently submitted additional information which included two roadmaps that provided additional clarity on how its specific deliverables work together to achieve its 2025 ambitions, and the outcomes it aims to achieve by the end of BP1.

Assessment of the ESO's RIIO-2 aims

We consider that the aims for Role 1 are ambitious. If the ESO's proposed new processes and systems can provide it with the consistent ability to efficiently operate (and restore if needed) a carbon free system in 2025,[69] then this would strongly exceed our expectations. Equally, we believe the ESO's aims to deliver fully automated and open data through its data platform, and to ensure the seamless exchange of operational and planning information between the transmission and distribution system, are suitably ambitious. Since our Draft Determinations, the ESO has outlined more clearly what improvements will be made to its forecasting abilities. Although the link to its 2025 aim

[69] ie in all settlement periods where the electricity markets deliver a carbon free solution, all ESO actions are also carbon free.

is not explicitly stated, we assume that these step change improvements will be needed and that this is therefore implicitly included as part of this commitment.

Overall, the RIIO-2 aims are sufficiently ambitious to merit a grade of 5. For the ESO to exceed expectations during BP1, it needs to make demonstrable progress against these aims.

Assessment of two-year Delivery Schedule

We expect that the activities in the Delivery Schedule will exceed the large majority of our expectations and we have therefore graded this Role a 5. To further build upon this score, and ensure that it exceeds our expectations, the ESO could:

- ensure that the data platform is designed in a way that interoperates with the energy data ecosystem and beyond, and take steps to demonstrate that it is treating its data processing methods and algorithms as presumed open
- ensure that it delivers upon the commitments outlined in its Energy Forecasting Roadmap, in addition to the commitments outlined in its updated Delivery Schedule.

1 (a) System operation		
Relevant deliverables	*Met minimum requirements?*	*Assessment against Ofgem expectations*
A1 (excluding, D1.1.7, D1.4.1) A2 A15.7	Yes	Exceeds

Comments:

- Liaison with ENTSO-E (**D1.1.4**), continued update of legacy IT systems (**D1.1.5**) as well as the continued production of the Operability Report (**D1.1.6**) meet our expectations for this role.
- We note that the milestones associated with upgrading legacy balancing and situational awareness tools (**D1.1.5**) are still to be confirmed and it is difficult to take a firm view on it here. However, the final success measure appears to meet our expectations by carrying out ongoing maintenance and incremental upgrades to its legacy balancing tools.
- More detail has been added to describe the milestones for Enhancing Balancing Capacity (**A1.2**). We consider that the final deliverable of being able to dispatch a greater number of market participants would exceed our expectations. The milestones for years one and two indicate that the ESO will be on track to deliver this capability, and if it can demonstrate good progress against its final delivery date it will exceed expectations.

1 (a) System operation

- The activity to transform network control (**A1.3**) is now better specified. The ESO will exceed our expectations if it can demonstrate that the design and scoping work undertaken in years 1 and 2, to enhance and upgrade its IT systems, will allow it to deliver its 2025 targets. Likewise, if the development of a wide area monitoring and control system (MCS) (**A15.7**), can facilitate zero-carbon operation by 2025, it will exceed our expectations.

- The activity to enhance the ESO's training material and training simulation and technology (**A2.2 - A2.3**) gives us confidence that the ESO's control centre engineers will have fit for purpose training and simulation tools. However, the activity is not particularly well outlined, and it is not clear that these activities will exceed our expectations.

1 (b) System restoration

Relevant deliverables	*Met minimum requirements?*	*Assessment against Ofgem expectations*
A3	Yes	Exceeds

Comments:

- The delivery of fully competitive black start procurement (**A3.1**) would exceed our expectations. The ESO's milestones demonstrate that it will actively seek to maximise the use of non-traditional sources of generation at all voltage levels, and could achieve a significant year on year increase in the level of restoration services that are competitively procured.

- Based on the information provided in the delivery schedule, the deliverables associated with the implementation of a restoration standard[70] (**A3.2**) meet our expectations as they show that the necessary milestones for its implementation will be achieved. To exceed expectations the ESO would need to effectively engage with industry to build consensus and implement it.

- The deliverables associated with a restoration decision making support tool (**D3.2.4**) could exceed our expectations if the ESO can successfully develop and implement a tool capable of providing dynamic restoration routes. However, it is unclear whether this activity will exceed expectations in BP1 based on the ESO commencing development work in Q4 of 2022/23. More detail on what will be achieved by the end of BP1 as the milestones ("engage with design") and the success measures ("tool design underway") are too open ended for us to be confident that this exceeds expectations.

- The ESO's Distributed Restart project (**A3.3**) demonstrates that the ESO is actively seeking to maximise the use of non-traditional sources of generation at all voltage levels in restoration plans. Gaining an understanding of the associated challenges to implementation, taking actions to resolve those challenges and developing solutions to allow participation of Distributed Energy Resources (DER) in the restoration market would exceed our expectations.

[70] If the ESO is obligated to do so by Ofgem and BEIS.

1 (c) Transparency, Data and Forecasting		
Relevant deliverables	*Met minimum requirements?*	*Assessment against Ofgem expectations*
D1.1.7 D1.4.1 D15.4.1 A15.6 (excluding D15.6.7) A17	Yes	Exceeds

Comments:

- Under the activity "Transparency and Open Data" (**A17**), four new deliverables have been added: Publishing a transparency roadmap; Transparency of operational decision making; Trading transparency; and the ESO Transparency Forum. These deliverables at least meet our expectations, as they show intent to provide user-friendly, comprehensive and accurate information, including transparency on control room decision making. To exceed expectations, the ESO would need to provide quality information and facilitate a high degree of understanding of the ESO's operations and decision-making processes.

- We consider that the integration of the data platform into the digital engagement platform (**D17.1**) and publication of this data in a machine readable format (**D17.2**) shows evidence of the ESO treating energy system data as presumed open. We believe that these deliverables take clear steps towards making its data widely available and easy to work with, and consider that it could meet our expectations. The availability of ESO data is a key enabler to the sector and to exceed our expectations, we would want to see the data platform designed in a way that interoperates with the energy data ecosystem and beyond.

- The milestones associated with the production and publication of detailed forecasts and analysis (**D1.1.7**) could exceed our expectations if the ESO can successfully deliver these milestones as well as the deliverables set out in its Energy Forecasting roadmaps. The milestones outlined in the Delivery Schedule have provided us with some confidence that the ESO will utilise machine learning to ensure forecasts are highly accurate for each half hour period, at both the national and the regional level, by making Grid Supply Point (GSP) level forecasts. They also suggest a step-change in improvements in forecasting accuracy each year through improvements to its forecasting models and processes. However, we note that it has been difficult to track progress in this area due to some commitments in the ESO's roadmaps not clearly aligning with those set out in its Delivery Schedule or its 2019-21 Forward Plan. For example, interconnector forecasts are mentioned in its roadmap but are not included in the deliverables for 2021-22. Going forward, commitments made in the ESO's Energy Forecasting roadmaps should be consistent with those in its Delivery Schedule.

- The ESO has stated that the data and analytics platform (**D1.4.1, D15.6.1, & D15.6.2**) will provide the foundational architecture for the control room to enable the development of an interchangeable suite of tools with a common datasets, and seamless exchange of data between tools. By 2023, the platform foundation will be delivered, the specific requirements of DNOs will be taken into account and code modifications will be implemented to facilitate T&D data exchange. If the ESO can create this functionality in the timeframes set out in the Delivery Schedule, it would exceed our expectations.

Assessment of Role 2

ESO's response to our assessment at Draft Determination

The ESO welcomed the support we showed to some areas of its proposal (such as a digitalised whole system Grid Code) but also acknowledged the areas where we asked for additional clarity. It did note that it will not always be able to define exactly what will be delivered, by when and how success will be measured. It stated that this is because there is significant analytical work to define the needs case, as well as stakeholder engagement and market design to define the details of the competitive mechanisms. As part of its final Delivery Schedule submission, the ESO submitted a further plan on how it intends to facilitate the Distribution System Operator (DSO) transition.

The ESO also noted that its ability to deliver elements of this role is dependent on other parties. Due to the necessary coordination with DNOs, it believes that achieving consistent and aligned markets and platforms for flexibility services across transmission and distribution, is to some extent, outside of its control. It also believed successful implementation of policy and regulatory changes by the EMR Delivery Body (and other EMR Delivery Partners) is dependent on the extent, nature and timing of changes determined by Ofgem and BEIS.

Assessment of the ESO's RIIO-2 aims

We support the ESO's overall aims to deliver close to real-time markets that promote the fair participation of all technologies. In the earlier stages of the RIIO-2 period, we think the ESO has set out ambitious well-formed aims in this area, including co-optimised reserve and response auctions and a single platform for all markets.

The ESO's aims beyond 2023 are less clear to us. We note that the ESO has stated an ambition to deliver 'competition everywhere' by 2025, but it is not fully clear if or how this will be achieved in some areas such as stability, thermal constraints and reactive services. It is also not fully clear the extent to which this aim extends across the whole system, including how the ESO intends to interface or coordinate with emerging distribution-level markets. To exceed our expectations over the RIIO-2 period, we would like to see plans for coordinated, competitive markets that cover all system services and which seamlessly integrate or align with any relevant distribution-level flexibility markets. Although we welcome the additional submission of a high-level plan for ESO-DSO alignment, it doesn't show a clear pathway for achieving aligned transmission and distribution markets, and what additional actions need to be taken beyond aligning

contract terms and procurement timelines. We recognise that the achievement of aligned transmission and distribution markets is not fully within the ESO's control. However, we think that the ESO could more clearly explain what it intends to do to achieve this, and demonstrate that it is it is doing everything within its control to facilitate this outcome.

We welcome the ESO's aim to introduce significant improvements for participants in both the Capacity Market (CM) and Contracts for Difference (CfD) schemes, and consider that it exceeds expectations. Since our Draft Determinations, the ESO has made it clearer how it will deliver material step-changes in the end-to end experience of participants (including integration of a new EMR portal with a single market platform), its implementation of policy changes, and the sophistication and accuracy of procurement recommendations for the CM.

The introduction of a single digitalised technical code for transmission and distribution, assuming it delivers the user functionality and benefits set out in the plan, would exceed our expectations.

We think the ESO should show greater clarity on its RIIO-2 aims in other areas of its work on industry codes and charging. We believe the ESO has set out good aims to transform its approach to code management. However, there are limited examples of the ESO aiming to proactively shape wider market arrangements and industry frameworks. It is unclear what the ESO's plan for a balancing, wholesale and capacity market review aims to achieve and we question why this does not occur at the beginning of the RIIO-2 period, given the implications for work across Role 2. The ESO's aims for charging and the SQSS still appear to be more reactive than examples of the ESO proactively shaping the direction of industry rules and arrangements.

Overall, there are significant aspects of this role that exceed our expectations (such as the balancing reforms and a digitalised Grid Code) but there are other areas where we think the ESO needs to show stronger, clearer aims. **As a result, we have graded the RIIO-2 aims a 4**. To achieve a higher score, the ESO would need to show increased clarity on what delivering competition everywhere means in practice. This could include more specific aims to develop regular, dependable, bankable markets for stability, voltage and thermal constraints. It could also show more ambition to proactively shape wider market arrangements and industry frameworks.

Assessment of two-year Delivery Schedule

We expect the activities in the Delivery Schedule will exceed some of our expectations and have therefore graded this Role a 4. To further build upon this score, and ensure that it exceeds our expectations, the ESO could:

- Ensure that it uses lessons learned from pathfinders to demonstrate clear progress in implementing enduring markets for solutions to stability, voltage and thermal constraints.
- Develop plans for coordinated, competitive markets that cover all system services and align with distribution-level flexibility markets. It could also work with DNOs to ensure that service providers have a single, consistent set of procurement requirements when looking to provide services to the ESO or DNOs.
- Demonstrate how it is proactively shaping wider market arrangements (such as balancing, wholesale and capacity markets) and industry frameworks, particularly when it comes to the development of distribution-level operational frameworks.
- The ESO could also go further than just ensuring compliance with EU regulations, and bring together GB stakeholders to develop and implement strategic plans for ensuring efficient trading relationships with connected TSOs.

2 (a) Market Design		
Relevant deliverables	*Met minimum requirements?*	*Assessment against Ofgem expectations*
A4	Yes	Exceeds

Comments:

- A single day-ahead response and reserve market (**A4.3**) and a single integrated platform for the ESO markets (**A4.4**) shows that the ESO has clear plans to maximise the procurement of all balancing services at day-ahead and implement a seamless suite of balancing services. If implemented on time in a joined-up manner with wider system changes, and with positive user feedback, this activity would exceed our expectations.

- The ESO has also included two new deliverables:
  1) "Alignment of ESO-DSO flexibility markets". This is a positive addition, and we consider that the ESO will meet our expectations by collaborating with DNOs to align flexibility service contracts, tendering and procurement timescales. We believe that this could ensure that balancing services procurement is coordinated and where appropriate standardised across networks. It also shows active participation in projects and forums that drive improved coordination in procurement, again meeting our expectations.
  2) "Enduring market structure for procurement of stability services". Again, this is a positive addition and if the ESO can proactively and transparently develop

2 (a) Market Design

a detailed implementation plan to deliver a stability market, we consider that that this *could* exceed our expectations. However, we note that the deliverables are mostly a continuation of current pathfinder arrangements. In addition, we note that there is a 12-month window on the ESO initiating a plan and there is not enough information outlined in the Delivery Schedule to provide a firm view on this activity. If the ESO does not make progress towards procuring stability services through a well-designed market that sits coherently within wider market reforms, the ESO would risk being below our expectations.

- We consider the strength of the integrated market platform deliverable is enough for this subset of activities to exceed overall. However, it is not entirely clear how far the ESO's plan will align its ancillary services developments with those of the DNOs, or deliver competition everywhere. If the ESO can demonstrate progress on these fronts as well, it will strengthen its case for exceeding expectations.

2 (b) EMR

Relevant deliverables	*Met minimum requirements?*	*Assessment against Ofgem expectations*
A5	Yes	Exceeds

Comments:

- The ESO, in its role as the EMR DB, is obliged to carry out specific tasks such as prequalification, the auction processes for the CM & CfD schemes, and managing agreement milestones for the CM. We note that these are mentioned as part of the deliverables, but do not have specific milestones in the delivery schedule.

- The ESO intends to make improvements to the customer experience through enhanced guidance and stakeholder engagement, applying lessons learned from previous auctions **(A5.1)**. We expect these deliverables and milestones will deliver improvements to prequalification and auction delivery, and a measurable improvement in the experience for all parties; therefore, exceeding most of our expectations. Furthermore, the ESO's plans to take the lead to deliver an improved prioritisation process exceed our expectations.

- The ESO aims to deliver an enhanced platform for the CM within the single, integrated ESO markets platform (**A5.2**). The deliverables and milestones outlined in this sub activity look to bring about a step change in the functionality and user experience of the EMR Portal. We consider this would exceed our expectations if, as indicated by the ESO, this is associated with a demonstrable and measurable improvement to customer satisfaction survey scores by the end of 2022/23.

- The ESO intends to improve its security of supply modelling capability and enhance its use of tools and data to ensure optimal procurement of capacity (**A5.3**). This includes improving European modeling and distributed generation modelling. Both deliverables look to enhance the ESO's modelling processes and would exceed our expectations. In line with our expectations, the ESO looks to continue to receive annual endorsement from the Panel of Technical Experts on enhancements to its modelling.

2 (c) Industry codes and charging		
Relevant deliverables	*Met minimum requirements?*	*Assessment against Ofgem expectations*
A6 A12 A15.3 A15.8	Yes	Meets

Comments:

- We consider that the activities **A6.1** to **A6.3** represent timely implementation of all GB and European code changes (and associated technical support **A15.3**), as well as competent and responsive development, management and maintenance of the charging process. We believe that the additions to its success measures now illustrate examples of proactively identifying and influencing necessary changes to GB industry frameworks to remove distortions and to ensure a level playing field. Therefore, we consider that these activities meet our expectations.

- To exceed our expectations, the ESO would have to demonstrate that it has also been working to proactively shape and provide system operation expertise and insights into the development of distribution-level operational frameworks, in addition to the codes that it has direct oversight of. We would also expect the ESO to look proactively for opportunities to provide insights, analysis and change proposals that consider the links and dependencies between balancing, wholesale and capacity markets.

- To exceed our expectations in relation to the implementation EU regulation and future relationships with interconnected countries, the ESO would need to go beyond ensuring compliance, and also bring together GB stakeholders to develop strategic plans for ensuring efficient trading relationships with connected TSOs. This would include using its position in ENTSO-E to influence European developments that impact GB.

- The ESO's work to transform the codes process (**A6.4**) appears to be mostly in line with our expectations, although some milestones do suggest a degree of proactivity that could exceed our expectations. Whether the ESO does exceed expectations will depend on whether it can deliver a strategic change plan based on robust evidence and proactive engagement with Ofgem, BEIS and industry.

- The ESO has brought forward its timelines to begin the process for creating a digitalised whole system Grid Code (**A6.5**). To exceed expectations, the ESO will need to demonstrate that the code modifications raised at the end of year two take clear steps to incorporating existing transmission and distribution codes into an IT system with the specifications outlined in its Business Plan.

- The ESO has provided a clearer view of the process that it will follow in its review of the SQSS (**A12**) and has expedited the timelines that it will work towards. It intends to prioritise identification and implementation of "quick wins", and if it can deliver these solutions without delays, we consider that the ESO could exceed our expectations for the first two years of RIIO2.

Assessment of Role 3

ESO's response to our assessment at Draft Determination

The ESO expressed its disappointment in our grading of Role 3. The ESO reinforced its view that its Role 3 proposals are vital to each of its four ambitions, particularly its ambition to operate a carbon-free system by 2025. It stated that its deliverables under Role 3 will provide the modelling, analysis and novel tools to support carbon-free system operation in real time.

The ESO disagreed with our view that it should monitor and evaluate previous analysis/scenarios, including by back casting. It said that due to the evolving nature of the FES process, coupled with the pace at which the external political, regulatory and operational environment changes, this would be difficult to achieve and of little benefit.

The ESO did not agree its RDP proposals do not present a step change from its RIIO-1 work. It said that in RIIO-2 it will be increasingly looking at how it can efficiently scale RDPs for broader roll-out across each DNO area. The ESO believes this is a step change from the approach in RIIO-1.

It also expressed disappointment in our grading of its plans for Long-Term Network Planning. It believed that its work to broaden the range of potential solutions to system needs and the providers of those solutions, and the development of new complex and bespoke tools to assess costs and suitability, is world-leading. It also said that it could not revise the timescales associated with the development of its tools due to the technically challenging nature of developing them.

Assessment of the ESO's RIIO-2 aims

Since publishing our draft determinations, the ESO has submitted an updated version of its Role 3 aims. In this, the ESO clarified that by March 2023, the end of BP1, its Role 3 activities *"will have delivered the capability [needed] to deliver for the system to be zero carbon operable by 2025, enabling an appropriate mix of assets and services to provide network capacity and system operability."*

To achieve this, the ESO restated its aims and intentions. These included actively supporting the distribution system operator (DSO) transition; testing new approaches to network challenges, scaling up best practice to enable wider roll out; transforming its analytical tools and modelling capabilities; and facilitating a level playing field for all types of solutions to compete to solve all types of network needs.

After reflecting on the ESO's consultation response, and further engagement with the ESO to better understand its proposals, we now consider that the Role 3 aims are ambitious and these exceed our expectations in several areas. **As a result, we have graded the Role 3 aims as a 4**.

To further exceed our expectations, the ESO must provide greater clarity on the coordination between different network assessments and commit to bringing forward a co-optimised[71] assessment of all solutions to all material transmission network needs.[72] This would include developing clear future vision and strategy for an optimal network assessment process (or suite of integrated and harmonised processes) capable of addressing zero-carbon system operability challenges. The ESO's existing aims are not clear on how the ESO intends the NOA, RDPs, pathfinders, and future enduring markets to fit together and deliver the aim of facilitating a level playing field for all types of solutions to compete to solve all types of network needs. The ESO should further explain what it expects the optimal end to end network assessment process should look like by the end of RIIO-2 and what steps are required to ensure the maximum possible participation of solutions to all material transmission network needs.

Assessment of two-year Delivery Schedule

Following the additional information provided by the ESO we have graded the Role 3 Delivery Schedule as a 4 as there are several deliverables that exceed our expectations. However, this grading is on the low end of a 4 score as there are significant areas where the Delivery Schedule only meets our expectations.

There are a number of areas where additional delivery could lead to an improved score and ensure that the ESO's outturn performance exceeds our expectations. For example, some Role 3 deliverables appear to be a continuation of current activities, albeit with the incremental improvements required to continually meet our expectations. For example, the ESO has stated an aim to continue performing pathfinders to facilitate learning that will be incorporated into the NOA methodology. The ESO's Delivery Schedule drew a link between its stability pathfinder and a plan for a new stability market. However, it does not appear that a similar plan is evident for developing enduring markets for other material network needs that are currently being considered through the pathfinders. To

[71] In this context co-optimised means: (1) greater integration between the different modelling tools to better understand the interactions between different possible solutions to different network needs; and (2) optimising the timing/synchronicity of different assessments. Co-optimisation should ensure optimal economic decision-making across all assessments of the relevant network needs. For the avoidance of doubt, this may or may not be a single co-optimisation tool.
[72] At present we understand that thermal constraints, voltage and stability issues are the most material network needs. We expect the ESO to keep all network needs under review and, if necessary, expand upon this.

exceed our expectations the ESO could use the learning from its pathfinders to develop and begin to implement a detailed plan for regular, dependable markets for solutions to stability, voltage and thermal constraints needs.

The ESO has also set out intentions to work with Ofgem, TOs and DNOs to support alignment of price control arrangements to facilitate whole system outcomes and network competition and identify and remove blockers to participation. However, the ESO's plan lacks specificity and we expect the ESO to show more clearly what it has learnt to date from the pathfinders. The ESO has not identified what price control arrangements might need to be aligned, what type of blockers might exist to participation or options for how these may be removed. So at present it is difficult to conclude that this exceeds our expectations.

It is now clearer what the ESO intends to deliver through its RDPs, and how these will contribute to its overall vision. Whilst simply establishing RDPs does not exceed our expectations, we consider many of the outputs from the RPDs have the potential to exceed expectations – especially where these outputs provide tangible developments that are applicable more widely (ie, not just in specific regions or with individual DNOs). Many of these outputs appear more relevant to Roles 1 and 2, and it is less clear how they will result in step changes improvements to Role 3 activities such as connections.

The ESO's plans to work with other network organisations to develop consistent and coordinated connection processes for customers, which facilitate efficient connection and access to the system via a new connections platform. This ambition appears to exceed our expectations, although we would welcome additional clarity on the functionality that the ESO aims to provide by the end of RIIO-2, and to what extent it will align or integrate with TO and DNO systems.

The ESO's aims to provide deeper, whole system insights are welcome, but there is limited information on what these insights will examine and what is meant in practice by deeper.

3 (a) Connections and access		
Relevant deliverables	*Met minimum requirements?*	*Assessment against Ofgem expectations*
A14 A15.2 A15.5 D15.6.7 A16	Yes	Exceeds
Comments:		

3 (a) Connections and access

- The deliverable that aims to enhance the customer connection experience (**A14.3**), outlines the benefits that a dedicated DER account management function could provide and we believe that this meets our expectation for the ESO to support all parties fairly. To exceed expectations the connections hub (**A14.4**) will need to facilitate a process that is consistent across transmission and distribution networks and has been developed in close collaboration with other network operators, industry and developers. It will also need to demonstrate clear progress towards creating a hub that acts as a single point of contact for connections to transmission and distribution networks. The information that the ESO provided to us indicates that it should exceed our expectations.

- More explanation has been provided on what outcomes and benefits the RDPs will achieve by March 2023 (**A15.5**). The outlined successes appear to show that the RDPs will ensure some consistency across different networks and facilitate efficient whole system connections. This meets our expectations but, in relation to Role 3 activities, it does not appear to present a step change from steps taken in RIIO-1 (noting that two RDPs have been carried over from RIIO-1) that would be required to exceed expectations.

- The ESO plans deliverables that will enable it to work more closely with DNOs and DER to facilitate network access (**A16.3**). The final successes for these deliverables indicate that this work *could* exceed our expectations, as the ESO suggests that they will facilitate a whole system approach to network access and planning by coordinating seamlessly with all network operators via common data exchange systems. However, based on the second-year success measures, it is difficult to conclude that this is the case. At this stage, we consider this deliverable therefore only meets our expectations. To exceed expectations the ESO will need to demonstrate clear progress towards delivering the above functionality during BP1.

- We consider that the ESO's whole system outage notification deliverables (**A16.4**) also meet our expectations, as it shows intent to coordinate with DNOs to enhance the notifications process.

- The continued enhancements to the Network Access Policy (NAP) process with TOs (**A16.2**) is in line with our expectation for the ESO to provide visibility on the costs and benefits associated with network outages, through system analysis and cost assessments.

3 (b) Strategy and Insights		
Relevant deliverables	*Met minimum requirements?*	*Assessment against Ofgem expectations*
D1.1.6 A13 A15.1 D15.4.2 A15.9	Yes	Exceeds

Comments:

- The deliverables outlined in **A13** Leading the Debate have been better specified in the updated delivery schedule. The continued production (with incremental year-on-year improvements) of the Future Energy Scenarios (FES), Winter Outlook and Review, Summer Outlook and other thought pieces (**A13.1 & A13.2**) meets our expectations. Year one and two milestones are also in line with our expectation for the ESO to ensure coordinated scenario development, (**A13.3**) and meets expectations.

- The ESO proposes to "provide insights and analysis beyond FES" (**A13.4**). This deliverable is indicative of proactive engagement with interested stakeholders to drive forward the improvement of industry data to deliver more reliable forecasting capabilities. However, it is still not entirely clear what 'deeper' whole system insights means in practice. The ESO also proposes to integrate its analysis with DNOs and other networks (**A13.5**) by helping development of a "DFES" and creating a data platform that "will allow for better sharing of data into and out of the ESO". We believe that this is a demonstration of proactively bringing together industry parties, both directly and through working with open data to identify consistent pathways to achieving scenarios that meet decarbonisation targets across the whole system. We also believe that the additional visibility could help stakeholders understand regional differences, and allow for more challenge to the ESO's assumptions, providing for more robust analysis. We therefore consider that successful delivery of these activities, if associated with positive user feedback, would exceed our expectations.

- The continued consideration and communication of future operability challenges (including the Operability Strategy Reports - **A15.1 & D1.1.6**) meets our expectations. Finally, the ESO's aim to trial new innovation projects for whole energy system operability (**A15.9**) in response to requirements identified in SOF is in line with our expectations

3 (c) Long term network planning		
Relevant deliverables[73]	*Met minimum requirements?*	*Assessment against Ofgem expectations*
A7 A8 A9 A10 A11 A15.10[74]	Yes	Meets

Comments:

- We consider that the activities involved in enhancing its analytical capabilities (**A11**) could provide step change improvements to the ESOs models, methodologies and analytical tools. We understand that this could allow the ESO to model more complex network issues and possible solutions, and the ESO has better explained the timelines involved. We have therefore concluded that this aspect exceeds our expectations.

- The activities involved in competitively addressing transmission needs (**A8**) are mostly in line with our expectations. The deliverables relating to pathfinders mainly focus on increasing the number of assessments undertaken, integrating them into the NOA methodology, and improving the accessibility of tenders. We believe that these activities are in line with our expectation that the ESO takes the NOA pathfinders out of the 'proof of concept' stage and further integrate them with the NOA into an established and coherent set of assessments governed by the NOA methodology. We consider that these deliverables will meet our expectations. To exceed our expectations, the ESO would have to begin the process of implementing regular, dependable, bankable markets for network issues currently assessed by the NOA pathfinders.

- The ESO also proposes to support Ofgem to establish enabling regulatory and funding frameworks (**A8.3**). At present the level of detail provided by the ESO is insufficient for us to make an informed assessment. To exceed our expectations, the ESO will need to proactively work to identify the key barriers and potential solutions to achieving competitive funding regimes. We would also expect the ESO to apply this activity in the context of the ESO receiving proposals from 'interested persons' as part of the NOA. Finally, the deliverable does not make any reference to support for an early competition model or a late competition model. Although this work is out of scope of the RIIO2 deliverables, it is a funded activity and should be referenced as it has clear relationships with other deliverables, such as the NOA pathfinders and funding frameworks.

- The ESO has planned to extend NOA approach to end of life asset replacement decisions and connections wider works (CWW) (**A9**). With respect to CWW, the ESO has stated that it will begin the RIIO2 period from a point where "most CWW are subject to NOA assessment, but some are not." In RIIO2, the ESO proposes to perform a trial assessment of all CWW in one region. Whilst we agree that this positive development and would meet our expectations by progressively extending the NOA year-on-year to include innovative recommendations, we

[73] Please note - at this point, we have not commented or considered the ESO's activities relating to early network competition (A18), as these plans are still under development. Will evaluate these deliverables once the ESO's roles and work packages are more certain, as discussed in Chapter 7.
[74] See ESO RIIO-2 Delivery Schedule – Offshore coordination. We note these activities may be revised within BP1, as discussed in Chapter 7.

3 (c) Long term network planning

have not seen evidence to suggest that the activity would exceed expectations. There is also not much detail about what the trial will involve, where it will be undertaken or the level of importance. Regarding the ESOs work on end of life asset replacement decisions, the ESO will only be starting to engage with TOs to see if it's feasible during year 2, and based on the information provided, we believe that this activity meets expectations. To exceed expectations, the ESO would have to go beyond engagement with TOs to understand the issue.

- The ESO also plans to share its NOA expertise with DNOs (**A10**). This engagement is line with our expectation for the ESO to assist the DNO's in developing network planning processes and ensure consistency across transmission/distribution network planning.

- The ESO's plan includes enhancements to its work identifying network needs and advising on solutions to those needs via the Electricity Ten Year Statement and NOA (**A7**). If these activities integrate all types of system needs (including at the Transmission / Distribution interface) within the ETYS publication, this would exceed our expectations. We also consider the activities aimed at improving accessibility of the publications are in line with our expectation to produce clear, accessible and timely publications. Overall, we consider that these activities could exceed our expectations.

- The ESO has updated its offshore grid deliverables (**A15.10**) since our draft determinations, although it stated that the specific milestones for each deliverable have yet to be determined. As a result, we are unable to provide a firm view on whether this activity will meet or exceed, although we consider that the success measures would be indicative of meeting our expectations.

Appendix 2 – Further detail on performance measures

This appendix sets out our detailed decisions Performance Metrics and Regularly Reported Evidence and our rationale for these decisions.

Role 1: Control centre operations

1A. Balancing costs performance metric

Purpose: measures the ESO's overall spend on balancing costs, and therefore the efficiency of its balancing actions and the success of many Business Plan activities.

Benefits: encourages the ESO to create savings for consumers by improving its operational systems, processes and balancing decision making.

Final Determination

Performance measure parameter	Final Determination		Draft Determination
Type	Performance Metric		Same as Final Determination
Method	Measures the ESO's outturn balancing cost expenditure versus a cost benchmark (including Black Start costs). Methodology includes the following elements: 1. Starting benchmark: average of total balancing costs for up to five years preceding the performance year, with weighting applied to each year (which could be zero) 2. Ex-ante benchmark adjustments: set by Ofgem on an annual basis to reflect any material network or market developments 3. Ex-post benchmark adjustment: Monthly ex-post adjustment of benchmarks depending on wind outturn		Consistent with Final Determination (but with less detail on the methodology)
Performance benchmarks	Exceeds	10% lower than meets benchmark.	
	Meets	Defined prior to start of RIIO-2 following further consultation on detailed inputs to methodology, reflecting data up until March 2021.	N/A
	Below	10% higher than meets benchmark	
Associated reporting	Explicit reporting on key monthly drivers of costs, including major outages and demand. ESO should compare demand to 2020/21 levels to provide transparency on the impact of covid-19.		N/A
Reporting frequency	Monthly		Same as Final Determination

Our methodology has been developed in collaboration with our external advisers, AFRY. More details on the potential approach, including the ex-post wind adjustment, can be found in AFRY's final report to us. This is published as a technical annex alongside this document (see the 'ESO Balancing Cost Metric Report').

We will shortly consult further on the final detailed inputs to this methodology through our ESORI Arrangements Guidance consultation in December. This consultation will seek views on:

- the final period of years used to define the historical benchmark,
- any specific annual ex-ante adjustments to the benchmark for 2021/22,
- the final calibration of the ex-post monthly wind adjustment, and
- the precise ex-post reporting requirements.

Final Determination rationale and Draft Determination responses

Respondents agreed balancing a cost metric was needed but had different views on the methodology that should be used.

The RIIO-2 CG suggested that any balancing cost benchmark adjustments should be kept to a minimum to maintain an incentive on the ESO to reduce actual balancing costs rather than an adjusted figure. They suggested that if an adjustment is applied, it should be simple and transparent and not dilute the incentive on the ESO. They also suggested that consideration be given to comparison of balancing cost performance against a 'perfect foresight' benchmark, as this could provide a better comparator than adjusted historical data. The ESO Performance Panel also suggested considering approaches that relied less on historical costs, such as back casting. Two stakeholders noted that given the pace with which new low carbon, intermittent energy is coming onto the system, the historical period and benchmark needs to be set to incorporate future reasonable costs.

The ESO noted it would work with Ofgem to agree a suitable methodology. It supported the inclusion of an ex-post wind adjustment in the methodology. The ESO's preference was for a straightforward, transparent methodology backed up with supporting narrative. The ESO said it will consider developing an explanatory model of costs, which can be used to provide a detailed narrative within reporting of the drivers for different categories of balancing costs. The ESO proposed we use the average cost across 2019/20 and 2020/21 to derive annual cost benchmarks, noting uncertainty over the extent to which covid-related demand changes could extend into 2021/22.

We recognise the support for a simple, transparent methodology. Wind is the largest driver of cost volatility, so including an adjustment in this area allows for a more meaningful measure of performance. We do not think this will add too much complexity. We also agree that historical costs are an increasingly poorer predictor of future costs. Our current view is that selecting a shorter averaging period (e.g. 2-3 years), and including ex-ante adjustments where necessary, can accommodate reasonable cost expectations over BP1. However, given the uncertainty of the impact of covid-19 on costs we think it would be pragmatic to further consider the detail inputs to our methodology to ensure the benchmark is a strong representation of efficient costs. Whilst there has not been time to develop a methodology based on perfect foresight or back casting, as suggested by the RIIO-2 CG and Performance Panel, we will keep this under review for BP2.

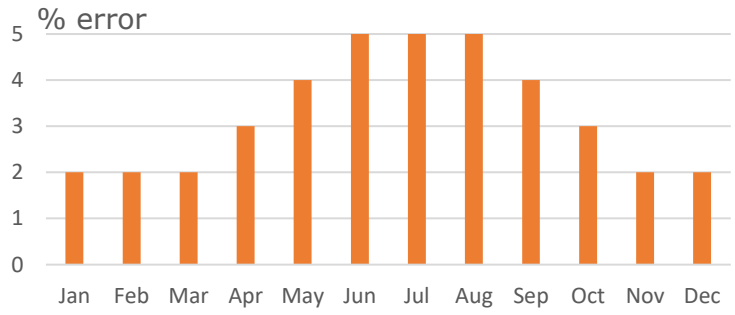
1B. Demand forecasting metric

Purpose: measures the ESO's accuracy forecasting short term demand.

Benefits: encourages the ESO to improve demand forecasting models and processes, which will reduce the number of additional balancing actions required, lowering costs for consumers. Accurate forecasting is increasingly needed for the ESO to achieve its zero-carbon system operation ambition.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Performance Metric	Same as Final Determination
Method	Measures the average absolute % error between forecast and outturn day-ahead demand for each half hour period. The current benchmarks are drawn from analysis of historical errors for the period between April 2014 and March 2020. This takes average Winter (November to March) and Summer (April to October) errors, and applies a smoothing over the two-month ramp period either side of Summer (as shown in Figure 2). 5% improvement in performance expected each year, with a range of +/-0.2% used to set the benchmark for meeting expectations. We have outlined indicative benchmarks below but intend to review the suitability of these based on outturn data post March 2020. We will confirm final	Consistent with Final Determination, although we did not indicate our intention to make use of outturn data post March 2020.

Performance measure parameter	Final Determination		Draft Determination
	benchmarks in our decision on the ESORI Arrangements Guidance next year.		
Performance benchmarks	Exceeds	Year 1: < 3.10% Year 2: < 2.94%	Same as Final Determination
	Mees	Year 1: 3.10-3.50% Year 2: 2.94-3.34%	
	Below	Year 1: > 3.50% Year 2: > 3.34%	
Reporting frequency	Monthly		Same as Final Determination
Associated reporting	Narrative on performance against benchmark, linking to forecasting deliverables. Benchmarks used for monthly reporting purposes are shown in Figure 2. **Figure 2: Monthly % error used to derive benchmarks**  		Same as Final Determination

Final Determination rationale and Draft Determination responses

The ESO and one other stakeholder commented on this metric. The ESO did not agree with the proposal. It was happy to use half-hourly data but disagreed with using absolute percentage error rather than absolute mean error. The ESO argued that consumer impact is more closely linked to MW errors and that using % errors would create a disproportionate focus on lower demand periods. The ESO also argued that whilst national demand was falling, this was due to increases in distributed production, so it was not appropriate to expect errors to proportionally fall.

The other respondent supported the methodology. The respondent noted it had previously raised concerns to the ESO that absolute mean error would not be effective at incentivising performance on a continual basis and that it led to insufficiently challenging targets. The stakeholder suggested that the proposed benchmarks for this Performance

Metric should be reviewed to account for the step change in performance expected from the ESO's Platform for Energy Forecasting.

We are maintaining the methodology set out in our Draft Determinations. Our key objectives for this metric are that it is transparent, easy to understand and that it incentivises performance across all periods and months. This means we consider there should be one overall set of performance benchmarks, which considers performance across the entire year, rather than performance being assessed separately for individual months.

We recognise that the use of % error could create a focus on lower demand periods when measuring total performance over the two-years. If we were to adopt a MW approach, we believe the opposite would be true, with a larger focus on high demand periods. Historical analysis over the last six years suggests that the ESO has had significantly less accurate forecasts over the summer periods than in winter. At the same time, months of low demand are increasingly becoming some of the most expensive periods in terms of balancing costs. We therefore do not agree with the ESO that focussing on MW errors (and thus higher demand periods) will better align with consumer interests. Given the two choices, we believe that a greater relative focus on low demand periods as opposed to high demand periods is likely to be more aligned with consumers' interests, at least over the next two years. This is because we believe there is a greater need for improvements in performance in these periods. We will review this over the course of BP1.

We believe the ESO needs to understand the underlying drivers of transmission demand changes no matter whether these are driven by changes in consumer offtake or changes in distributed generation. We do not agree that transmission level demand increasingly being influenced by distributed generation makes a % error methodology inappropriate. Whilst we recognise increased embedded generation could increase the complexity of transmission demand forecasting, we consider this point is more relevant to the choice of performance benchmarks.

We have proposed a 5% year on year reduction recognising that step-changes in transmission-level forecasting, in all months of the year, will be increasingly important for the ESO to manage the system efficiently as we transition to Net Zero. This also accounts for investments the ESO has made to improve forecasting, such as its Platform for Energy Forecasting. However, we recognise that covid-19 have may created a degree of additional uncertainty on demand changes. We plan to review additional outturn data from this year before confirming the final benchmarks as part of our decision on the

ESORI Arrangements Guidance. We will review any additional evidence the ESO has on the appropriate % error benchmarks as part of this.

1C. Wind generation forecasting metric

Purpose: measures the ESO's accuracy forecasting short term wind generation.

Benefits: encourages the ESO to improve short-term wind generation forecasting, which will reduce the number of additional balancing actions required, lowering costs for consumers. As the volume of wind generation on the system increases, it is increasingly important that the ESO looks for new way to improve wind generation forecasts.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Performance Metric	Same as Final Determination
Method	Measures the average absolute % error between forecast and outturn day-ahead wind generation for each half hour period. Aspects such as the period of historic data used to set targets and expected annual improvement will be defined through our ESORI Arrangements Guidance consultation.	Apply the same methodology as demand forecasting.
Performance benchmarks	Defined prior to start of RIIO-2 following further consultation on detailed inputs to methodology and reflecting latest available outturn wind forecasting data.	n/a
Reporting frequency	Monthly	Same as Final Determination
Associated reporting	Narrative on performance against the benchmark. Monthly benchmarks for reporting purposes will be defined through our ESORI Arrangements Guidance consultation.	n/a

Final Determination rationale and Draft Determination responses

The ESO noted that although it will continue to forecast wind generation in RIIO-2, it believes that wind output is increasingly influenced by market as well as weather conditions, as many wind farms have on-site storage. The ESO suggested detailed turbine-level data would be needed to improve forecast accuracy but that this information is not currently available to the ESO. The ESO suggested that as its ability to

forecast wind generation output is influenced by factors outside of its control, it should become an item of Regularly Reported Evidence rather than a Performance Metric.

We believe accurate wind forecasting will only increase in importance over the course of RIIO-2.[75] We do not think the ESO has provided a strong enough justification for why, from the start of RIIO-2, forecasting of wind generation will cease to be sufficiently within its control for this to be metric. The ESO is currently working on improvements to energy forecasting processes through its Platform for Energy Forecasting, where wind is in scope.[76] In its RIIO-2 Business Plan, the ESO also plans to continue with the investment made under RIIO-1, to enhance mathematical forecasting models and refresh its forecasting system. This suggest the ESO recognises that its systems, process, and modelling techniques are important contributors to forecasting accuracy.

We are not persuaded that no further improvements can be achieved or that a current lack of turbine-level data is an insurmountable barrier. We also consider that sufficient historical data is available to define reliable benchmarks to measure the ESO's performance in this area. We will review any further evidence from the ESO on the scope for further improvements as we set the final benchmarks for this metric as part of our decision on the ESORI Arrangements Guidance next year.

1D. Short notice changes to planned outages metric

Purpose: tracks the number of outages delayed or cancelled due to ESO process failure.

Benefits: creates a focus on the ESO delivering an efficient outage process, which can help minimise costs for other parties.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Performance Metric	Same as Final Determination
Method	Measures the number of planned outages delayed by more than an hour or cancelled in the control phase (within day) due to process failure, per 1,000 outages.	

[75] In its business plan, the ESO forecasts a large increase in offshore wind generation from 9 GW today to between 21 GW and 34 GW in 2023.
[76] Platform For Energy Forecasting (PEF) Strategic Project Roadmap Update June 2020: https://data.nationalgrideso.com/backend/dataset/b290ba7c-8076-4122-9e83-de723e1e5425/resource/6573bd88-c17c-41d8-b4d1-6ae89d796e40/download/ngeso-pef-energy-forecasting-strategic-roadmap-june-2020-update.pdf

Performance measure parameter	Final Determination		Draft Determination
Performance benchmarks	Exceeds	Year 1: <1 Year 2: <1	
	Meets	Year 1: 1 to 2.5 Year 2: 1 to 2.5	
	Below	Year 1: >2.5 Year 2: >2.5	
Reporting frequency	Monthly		
Associated reporting	Narrative on performance against benchmark.		

Final Determination rationale and Draft Determination responses

The ESO supported this metric and believed that the proposed benchmarks were sufficiently challenging. We received no comments from other stakeholders. We are therefore maintaining our Draft Determination.

1E. Transparency of operational decision making

Purpose: measures the extent to which the ESO is taking actions outside of merit order, for example due to system constraints or inability to handle multiple bids and offers.

Benefits: creates transparency for stakeholders on the ESO's operational strategy, supporting investor confidence. Also measures whether the ESO can handle the increased volume providers expected on the system on the pathway to Net Zero.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	Same as Final Determination (but named 'Skip rates')
Method	Measures the % balancing actions taken outside of merit order in the Balancing Mechanism each month.	
Quantitative expectations	n/a	
Reporting frequency	Monthly	
Associated reporting	The ESO's supporting rationale for % of actions taken outside of metric order including trends seen over the course of BP1. This should include an explanation of any steps being taken that may influence these trends.	n/a

Final Determination rationale and Draft Determination responses

The ESO was happy to report this information but proposed an alternative title of "transparency of operational decision making" rather than 'Skip rates' to avoid negative connotations. We are happy to change the title.

Two respondents suggested this area should be considered for inclusion as a Performance Metric with associated performance benchmarks. One respondent also suggested the ESO should set out the steps it is taking to reduce the skip rate and the approximate impact each step is expected to have.

We do not think it is currently possible to set reliable ex-ante benchmarks in this area, given the influence of outside factors and uncertainty on how the ESO's investments and future energy system changes may influence skip rates in practice. However, we intend to review this for BP2. We agree that clear narrative from the ESO will be an important component of this Regularly Reported Evidence and agree with the suggestion to link the measure to tangible actions.

1F. System Zero Carbon Penetration (SZCP) indicator

Purpose: measures the ESO's progress against its zero-carbon operability ambition by tracking the proportion of zero-carbon generation the system can accommodate.

Benefits: creates transparency for consumers and stakeholders around the ESO's progress against its zero-carbon operability ambition.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	We proposed previously that the ESO report on the volume on renewables constrained each month.
Method	Measures maximum penetration of zero-carbon generation achievable on the system without compromising system stability. The SZCP indicator is defined as: $$SZCP\ (\%) = \frac{(Zero\ carbon\ generation + Net\ interconnector\ imports)}{(System\ demand + Net\ interconnector\ exports} \times 100$$ We are discussing the precise details of the measure with the ESO and will make a final decision as part of our decision on the ESORI Arrangements Guidance next	

Performance measure parameter	Final Determination	Draft Determination
	year. Our current expectation is that this Regularly Reported Evidence would be structured as follows: Part 1: defining the maximum SZCP limit The ESO will define the approximate maximum (to the nearest 5%) SZCP the system can accommodate at the start and end of BP1, explaining which deliverables are critical to increasing the limit. Part 2: regular reporting on actual SZCP Every month/quarter the ESO will publish outturn data on the SZCP provided by the market versus the SZCP following ESO actions. Part 3: updates on progress towards increasing the SZCP limits Every year the ESO will provide more detailed case studies on the periods where the market delivered the highest SZCP and the actions the ESO had to take in response. It will provide updates on any actions that have materially impacted, or are expected to materially impact, the SZCP limit.	
Quantitative expectations	n/a	
Reporting frequency	TBC – defined as part of ESORI Arrangements Guidance consultation	

Final Determination rationale and Draft Determination responses

We have reflected on feedback from several stakeholders that they would like to see more measures linked to the ESO's strategic goals. As the ESO's zero-carbon ambition is one of its key strategic goals, we have explored additional measures that could help provide transparency on the achievement of this goal.

Noting feedback from some stakeholders, including the ESO, that the volume of renewables constrained may not be an appropriate measure of this ambition, we have decided to replace this with the SZCP indicator. The SZCP indicator has been influenced by the System Non-Synchronous Penetration (SNSP) measure used in Ireland, which we understand has provided helpful transparency on EirGrid's progress accommodating renewables on the system.[77] We have adapted this measure to focus on zero-carbon generation, rather than non-synchronous generation, to align with the ESO's ambition.

[77] https://www.eirgridgroup.com/site-files/library/EirGrid/SNSP-Formula-External-Publication.pdf

We would expect that, in line with the ESO's ambition, the system should be able to achieve 100% SZCP by 2025. By requiring the ESO to report annually on progress towards reaching a SZCP indicator of 100%, we can create additional transparency on the ESO's achievement of its 2025 ambition. Without this measure, the ESO's progress on its zero-carbon ambitions is mainly tracked through its delivery of milestones, such as phases of IT projects. For many of these milestones, it may be difficult to understand what progress has been made against the ambition in practice. The SZCP would support wider ESO reporting to create a better overall picture of the ESO's progress against its zero-carbon operation ambition.

As the SZCP indicator was not proposed at our Draft Determinations, we intend to work further with the ESO to agree the precise details prior to the start of the RIIO-2 period.

1G. Carbon intensity of ESO actions

Purpose: tracks the proportion of total carbon emissions driven by ESO actions.

Benefits: provides additional transparency on the ESO's progress towards its zero-carbon operability ambition.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	n/a
Method	Calculates the approximate gCO2e/kWh of actions taken by the ESO, considering the proportion of the total CO2 emissions on the system which is a result of ESO actions. We are discussing the precise details of the measure with the ESO and will make a final decision as part of our decision on the ESORI Arrangements Guidance next year.	
Quantitative expectations	n/a	
Reporting frequency	TBC – to be defined through ESORI Arrangements Guidance consultation	

Final Determination rationale and Draft Determination responses

Stakeholders have suggested we develop more measures linked to the ESO's strategic ambition. Through our subsequent discussions with the ESO on how to do this, the ESO

suggested we could measure the carbon intensity of its actions. Some stakeholders have also suggested similar measures. We believe this would be beneficial and could be reported alongside the SZCP indicator as additional supporting evidence on the ESO's progress towards its zero-carbon ambition.

1H. Constraints cost savings from collaboration with network operators

Purpose: tracks the constraints costs savings created through use of the ESO-TO funding mechanism.

Benefits: creates transparency around the benefits generated from the ESO's aim for deeper network access planning.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	Same as Final Determination
Method	Measures the estimated £m of avoided constraints costs from solutions brought forward through the ESO-TO funding mechanism[78]. Where applicable, these savings should be calculated in line with the methodology that may be developed as part of the new trial financial incentive on TOs (the SO:TO Optimisation ODI-F). In other cases, the ESO should clearly state the assumptions used for its estimated savings.	Savings from short term outage optimisation: £m avoided balancing costs saved through short term outage optimisation decisions (through use of STCP 11.4).
Quantitative expectations	n/a	n/a
Reporting frequency	Quarterly	Not specified

Final Determination rationale and Draft Determination responses

The ESO was happy to report this measure on a quarterly basis, although noted that it preferred to continue to report the savings in MWh because prices fluctuate as market

[78] See STCP 11.4: https://www.nationalgrideso.com/document/133421/download

conditions vary. This item of Regularly Reported Evidence was welcomed by the other stakeholder that commented.

As discussed in Chapter 8, for Final Determinations we have decided to introduce a new trial financial incentive on TOs to work with the ESO to minimise constraints costs. This will require the ESO to set out the £m savings from any solutions brought forward through STCP 11.4. We have therefore aligned this Regularly Reported Evidence with this new TO incentive to minimise unnecessary overlap. We acknowledge the ESO's concern that a precise £m benefit calculation may be difficult, and we are content for this to be an estimation based on a transparent methodology.

1I. Security of Supply reporting

Purpose: measures the quality of service that the ESO delivers in running the electricity network by tracking the number of frequency and voltage excursions that take place.

Benefits: requires the ESO to demonstrate its continued ability to keep the system secure and stable as it achieves its goal of operating the system carbon-free.

Final Determination

<table>
<tr><th>Performance measure parameter</th><th>Final Determination</th><th colspan="2">Draft Determination</th></tr>
<tr><td>Type</td><td>Regularly Reported Evidence</td><td colspan="2" rowspan="2">Frequency:
We proposed a Performance Metric on number of excursions outside 0.3hz for more than 60 seconds.

Voltage: Same as Final Determination</td></tr>
<tr><td>Method</td><td>Part 1: Excursions

Monthly report on number of:
i. frequency excursions outside 0.3hz for more than 60 seconds, and
ii. voltage excursions outside statutory limits

Part 2: Annual backward and forward-looking report

Annual summary of the ESO's compliance with its frequency control methodology and plans for any future changes to the methodology[79].</td></tr>
<tr><td rowspan="3">Quantitative expectations / Performance benchmarks</td><td rowspan="3">n/a</td><td colspan="2">Frequency:</td></tr>
<tr><td>Exceeds</td><td><3 per year</td></tr>
<tr><td>Meets</td><td>=3 per year</td></tr>
</table>

[79] Subject to associated modifications to the SQSS being approved.

Performance measure parameter	Final Determination	Draft Determination	
		Below	>3 per year
Reporting frequency	Part 1: Monthly / Part 2: Annual	Monthly	

Final Determination rationale and Draft Determination responses

The ESO did not agree with the proposed Performance Metric for frequency excursions although it was happy to report voltage excursions as Regularly Reported Evidence. The Performance Panel also raised concerns that focussing on the number of excursions may not be the most appropriate measure of performance.

The ESO argued that 0.3hz was not a relevant measure of performance as frequency excursions up to 0.5hz are expected as part of the Security and Quality of Supply Standard (SQSS). It argued that excursions outside of its operational limits of 0.2hz are increasingly likely with the increase in more intermittent generation sources. It thought that placing a Performance Metric on excursions outside 0.3hz could create a perverse incentive to spend more to balance the system within this tighter margin for error. The ESO was concerned that this could undermine ongoing work to define the right balance between the competing objectives of reliability and cost as part of SQSS modification GSR027.[80] The ESO suggested that we instead measure instances where frequency goes outside limits agreed in the new proposed Frequency Risk and Control Report.

Our Draft Determination proposal was designed to create transparency on the ESO's secure operation of the system as we transition to a low carbon system. We think that the ESO reporting on the number of excursions outside 0.3hz (i.e. excursions that exceed the ESO's operating limits and come close to breaching statutory requirements) can help create this transparency. It would help us, and stakeholders, understand whether the ESO's new IT investments and efforts to bring more technologies into response markets are delivering benefits to system operation.

However, we recognise the ESO and Performance Panel's concerns that defining a specific Performance Metric on frequency excursions could undermine ongoing work to define the right balance between reliability and cost. We therefore believe this would be better as Regularly Reported Evidence, with no numeric performance benchmarks. We

[80] GSR027: https://www.nationalgrideso.com/industry-information/codes/security-and-quality-supply-standards-old/modifications/gsr027-review

plan to also update our Roles Guidance to make clear what we would expect the ESO to demonstrate to exceed our expectations in this area.

We agree with the ESO's suggestion to report on compliance with the Frequency Risk and Control Report (assuming GSR027 is approved). As part of this, we would like to see the ESO's explanation of how it is proactively looking to ensure future security of supply standards are fit for purpose for a low carbon energy system.

1J. CNI outages

Purpose: tracks the ESO's ability to forecast accurately and deliver planned outages for critical IT systems and minimise unplanned outages to these systems.

Benefits: creates transparency around the quality of delivery of new and updated IT systems.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	Same as Final Determination
Method	Number and length of planned and unplanned outages to critical national infrastructure (CNI) IT systems.	IT system outages: number of unplanned outages to external facing IT systems.
Performance benchmarks	n/a	n/a
Reporting frequency	Quarterly	Monthly

Final Determination rationale and Draft Determination responses

The ESO responded that it was happy to report on the number and length of planned and unplanned outages for CNI systems. However, it thought it would be disproportionate to introduce reporting on other systems given the number of other systems that exist and the less clear consumer impact of outages on these systems. The ESO agreed that it was not possible to set reliable performance benchmarks now. It suggested that a Performance Metric could be introduced once new CNI systems are introduced (many of which will not be introduced until BP2).

We have decided to require reporting on CNI systems only, rather than all external facing IT systems. This is based on the that ESO's assurances that CNI system outages have the biggest impact on stakeholders. We believe stakeholder satisfaction measures will enable us to monitor concerns about other external facing IT systems. We will review this position if significant issues with other systems materialise. Following subsequent feedback from the ESO on the complexity of monthly reporting for this measure, we have changed this to quarterly reporting.

Role 2: Market development and transactions

2A. Competitive procurement metric

Purpose: measures the proportion of ESO services procured through competitive means.

Benefits: encourages the ESO to increase competition in the procurement of balancing services, supporting investment signals, and reducing costs for consumers. Creates transparency on the ESO's progress towards its ambition for competition everywhere by 2025.

Final Determination

Performance measure parameter	Final Determination		Draft Determination
Type	Performance Metric		Same as Final Determinations
Method	Measures the overall % of services procured through competitive means (auctions and tenders) calculated by £ expenditure.		
Performance benchmarks	Exceeds	Y1: >60% Y2: >75%	
	Meets	Y1: 50-60% Y2: 65-75%	
	Below	Y1: <50% Y2: <65%	
Reporting frequency	Quarterly		Monthly
Associated reporting	Whilst the metric will assess the overall percentage of competitive spend, the ESO should also provide a breakdown of the percentage of competitive spend for its different services: frequency response, reserve, reactive, restoration and constraints. Data should be presented on a monthly granularity. The ESO should provide rationale for performance		In line with Final Determinations (although less detail set out).

Performance measure parameter	Final Determination	Draft Determination
	against benchmarks, with a clear link to associated deliverables in its Business Plan.	

Final Determination rationale and Draft Determination responses

The ESO was content to report on this metric, and felt the benchmarks were sufficiently challenging. It expressed some concern that a measure based solely on spend risked being misleading as increased competition can bring prices and therefore overall spend down. We still consider that using a single measurement is more transparent and intuitive than creating a weighted combination of measurements, and that overall spend is the best measure to use. We also note that ESO has not expanded on how a measure with multiple factors would be combined to set benchmarks. The ESO may choose to report other factors, such as service volumes and market prices, as part of its supporting justification alongside the metric.

The ESO preferred to produce this metric on a quarterly basis given the resource involved. We are happy for this to reported on a quarterly basis. However, we consider the data should presented for each month to support transparency on progress.

Two respondents did not agree that the proposed benchmarks for this metric were sufficiently challenging. We have reviewed the benchmarks considering this feedback, but still consider they are sufficiently challenging. The benchmarks have been drawn from analysis of the existing level of competitive spend in each service and our expectations for each service from now to 2024/25 (when we expect 100% competitive procurement in every market). This embeds our expectations that there will be 100% competitive procurement of reserve and frequency response much earlier than this. This should therefore put pressure on the ESO to introduce step changes in reactive, restoration and constraints to exceed our expectations. However, we will keep the benchmarks under review and we will consider changes for BP2 if necessary.

One respondent suggested it was important the expenditure calculation accurately reflects the full cost of the non-competitive procurement approaches. We agree this is important and will work with the ESO to create transparency on the reported values.

2B. Diversity of service providers

Purpose: measures the diversity of technologies in ESO markets.

Benefits: creates transparency around the ESO's progress making its markets accessible to all types of provider and therefore its competition everywhere aim.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	Same as Final Determination
Method	Measures the diversity of technologies that provide services to the ESO in each of the markets covered by Performance Metric 2A. We will finalise the precise format of the data and reporting requirements as part of the ESORI Arrangements Guidance consultation. We currently expect data to be reported at a monthly granularity and that it should be presented to enable stakeholders to clearly track trends over time.	Same as Final Determination
Quantitative expectations	n/a	n/a
Reporting frequency	Quarterly	Monthly

Final Determination rationale and Draft Determination responses

The ESO is happy to report on this information but suggested this should be on a quarterly basis. We are happy for this information be reported quarterly, alongside the competitive procurement metric, but we consider the data should be presented at a monthly granularity to support transparency on the trends seen in each market. In subsequent discussions with us, the ESO has identified several ways data on market diversity could be presented. We see value in considering this further as part of our ESORI Arrangements Guidance consultation.

Two respondents suggested this should be a Performance Metric. Whilst we agree the ESO has a vital role in creating a level playing field in balancing services, it cannot guarantee what comes forward. It also must remain technology neutral. We therefore do not think it is currently possible to set reliable benchmarks. We feel the combination the competitive procurement metric; data and narrative of diversity in different ESO markets; our measurement of the successful delivery of balancing reform milestones; and stakeholder satisfaction for Role 2, will create a strong picture of ESO performance.

2C. EMR decision quality

Purpose: measures the percentage of the EMR DB's prequalification decisions overturned by Ofgem in the Tier 2 disputes process out of the total number of prequalification applications received for the Capacity Market auctions.

Benefits: high levels of participation in the Capacity Market auctions improves auction liquidity, which can result in significantly lower costs to consumers. Additionally, the measure improves transparency of the quality of the EMR DB's decision-making process.

Final Determination

Performance measure parameter	Final Determination		Draft Determination
Type	Regularly Reported Evidence		Same as Final Determination
Method	Measures the number of themes of Capacity Market prequalification decisions overturned[81] by Ofgem in the Tier 2 disputes process.		Same as Final Determination, however we proposed to also measure overturns for Contract for Difference (CfDs) decisions.
Quantitative expectations (overturned themes per 1000 applications)	Exceeds	Year 1: <1.5 Year 2: <1.3	Across both years: <1.3
	Meets	Year 1: 1.5 to 2 Year 2: 1.3 to 1.5	Across both years: 1.3 – 1.5
	Below	Year 1: >2 Year 2: >1.5	Across both years: >1.5
Approach to measurement	Overall performance for BP1 will consider performance against expectations in each year individually.		Overall performance in BP1 assessed looking at total overturns across the two prequalification years.
Reporting frequency	Annually		Same as Final Determinations

[81] The ESO's performance against this measure is assessed upon the number of reviewable decisions by the EMR DB that are overturned by the Authority. By 'overturn', we mean the number of unique decisions made by the Delivery Body, which, upon appeal to Ofgem, are changed. This applies to specific grounds for dispute, within any given appeal (and not the whole appeal itself). Hence one 'overturn' could represent any number of prequalification applications, where the Authority deems the decision taken by the Delivery Body is materially the same. The number of overturns is then assessed against our quantitative expectations for this measure.

Final Determination rationale and Draft Determination responses

Three respondents to our Draft Determinations explicitly shared views on EMR decision quality. Two respondents believed there may be merit in including EMR decision quality as a Performance Metric rather than Regularly Reported Evidence. One respondent noted that in doing so, this ensures greater focus on the performance of the EMR DB function in this area. The ESO, in its role as the EMR DB, agreed that this is an appropriate measure to inform performance assessments but proposed an amended version of the quantitative expectations to be used, as part of a holistic assessment of performance.

We are maintaining our Draft Determination position to take this forward as Regularly Reported Evidence. Given prequalification only occurs during one part of the year, it does not meet our criteria for a Performance Metric. However, as we are setting clear quantitative expectations, we do not think this classification makes any material difference to the ESO's overall performance assessment.

We have decided to apply a 'phased' approach to our quantitative expectations. Having considered the ESO's proposal, we have chosen to apply more lenient expectations for the 2021/22 performance year. However, we are maintaining our Draft Determination position for the 2022/23 expectations. Given the volatility in applications each year, we believe that a phased approach allows flexibility for lessons learned in this area over time and incentivises continuous improvement. We will measure performance separately for each year to reflect this.

We suggested in our Draft Determinations that a performance measure related to the EMR DB's decisions related to the Contracts for Difference (CfD) scheme was necessary. Having considered the issue further, we are not maintaining our Draft Determination position to include such a performance measure. Historically, the EMR DB's performance in this area has been to a high standard having seen no overturns by the Authority. We do not believe that such a measure would incentivise improved performance in this area based on the EMR DB's historical performance; therefore, we do not think Regularly Reported Evidence is required. However, we do expect a consistent level of performance in future CfD Allocation Rounds when compared with the EMR DB's historical performance and we will make this clear in our Roles Guidance.

2D. EMR demand forecast accuracy

Purpose: measures the ESO's peak demand forecasting performance for Capacity Market auctions and therefore the success of its modelling improvements.

Benefits: encourages the ESO to improve the accuracy of peak demand forecasts, which will optimise the volume of capacity procured in the Capacity Market auctions, and consequently will reduce costs to consumers and security of supply risk.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	Same as Final Determinations
Method	Measures the ESO's accuracy of Peak national demand forecasts[82] for Capacity Market auctions.	
Quantitative expectations	See Table 20	
Reporting frequency	Annually	
Scope	All forecasts that outturn post 1 April 2021 will be assessed against this measure.	N/A

Table 20: Quantitative performance expectations for EMR demand forecasting

	exceeding expectations	in line with expectations	below expectations
2021/2022 T-1	<2% peak demand accuracy	2% peak demand accuracy	>2% peak demand accuracy
2021/2022 T-4	<4% peak demand accuracy	4% peak demand accuracy	>4% peak demand accuracy
2022/2023 T-1	<2% peak demand accuracy	2% peak demand accuracy	>2% peak demand accuracy
2022/2023 T-4	<4% peak demand accuracy	4% peak demand accuracy	>4% peak demand accuracy

These expectations are consistent with the targets for the RIIO-1 peak demand accuracy incentive, given some forecasts were made within the RIIO-1 period. Under the new RIIO-2 framework, the extent to which the ESO exceeds, meets or falls below expectations will also depend on the ESO's supporting information. For example, if the ESO has >4% accuracy for a T-4 auction, but there are good mitigating reasons for this, the ESO could still meet our expectations.

[82] Please refer to the definition of Peak National Demand Forecast (and the further definitions contained therein) in NGESO's Electricity Transmission Licence – Special Conditions. The current definitions remain consistent in the new version of the Licence for the RIIO-2 price control. Licence conditions can be accessed via the Electronic Public Register (ePR) found here: Electronic Public Register (ePR).

As a result of the CM suspension from November 2018 to October 2019, the planned 2018/19 T-4 CM Auction for Delivery Year 2022/23 was replaced by the 2019/20 T-3 CM Auction for Delivery Year 2022/23. The peak demand forecast associated with the 2019/20 T-3 CM Auction was therefore the forecast used to recommend a capacity to procure target, for the 2022/23 Delivery Year. As a result, it may be suitable to use the 2022/23 peak national demand forecast associated with the 2019/20 T-3 CM Auction for the purposes of assessment against this performance measure.

Final Determination rationale and Draft Determination responses

We did not receive any responses to our Draft Determinations that explicitly discussed EMR demand forecasting accuracy.

We are maintaining our Draft Determination position on both taking this forward as Regularly Reported Evidence, and the quantitative expectations.

We are extending the scope of this measure to include all forecasts which outturn after 1 April 2021. We note that this decision means that forecasts created under the RIIO-1 performance framework will be assessed via the RIIO-2 incentive scheme.

The mechanistic incentives set during the RIIO-1 period were set when the ESO was legally a part of NGET, and therefore a part of NGET's financial framework. The ESO's balance sheet is significantly smaller than that of NGET (at the time that the EMR DB's RIIO-1 mechanistic incentive values were decided). As such, we consider that maintaining the financial award, or penalty, associated with the RIIO-1 metric would be incompatible with the ESO's RIIO-2 framework. This situation has arisen from the legal separation of the ESO from NGET in 2019[83], and in that regard, is unprecedented. We believe that given this transition, it is sensible to align the EMR incentives values with that of the wider ESO RIIO-2 incentives. In doing so, this concludes the RIIO-1 peak demand forecasting incentive mechanism on 31 March 2021, and all forecasts made under this incentive that outturn post 1 April 2021 will be assessed under the RIIO-2 measure in this section.

In coming to our position, we have consulted with the ESO, noting that we did not propose a solution to this in our Draft Determination. The ESO agree with us that all forecasts out turning after 1 April 2021 should be assessed under the RIIO-2 framework.

[83] On 1st April 2019, NGESO was legally separated from NGET (National Grid Electricity Transmission), and therefore took the role of EMR DB. To avoid confusion, we use ESO throughout this section, including when discussing obligations originally imposed on NGET.

2E. Accuracy of forecasts for charging

Purpose: measures the ESO's performance providing accurate information for setting industry charges.

Benefits: by setting accurate charges the ESO can minimise costs for other parties, for example the TOs.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	Same as Final Determination
Method	Measures the accuracy of forecasts used to set industry charges. Precise details to be defined through further discussions with the ESO. We are considering further whether the measure should focus on the overall charge, or the subcomponents of charges that the ESO has most influence over (eg, forecasts of MWh annual demand). We will also consider further which charges this should apply to.	Accuracy of TNUoS charges.
Quantitative expectations	n/a	n/a
Reporting frequency	TBC – to be defined through ESORI Arrangements Guidance consultation.	n/a

Final Determination rationale and Draft Determination responses

The ESO noted that this was a new requirement for RIIO-2 and wanted to work with us to clarify what would be included. In subsequent discussions with the ESO we have identified several ways to set this measure. In order ensure the best approach is taken forward, we plan to work with the ESO further and make a final decision on the details of this measure as part of our ESORI Arrangements Guidance decision next year.

Role 3: System insight, planning and network development

3A. Future benefits from operability solutions

Purpose: measures the extent to which the ESO's implementation of new operability solutions will create benefits for consumers and progress its RIIO-2 ambitions.

Benefits: creates transparency on the consumer benefits the ESO creates through medium to long term actions, encouraging the ESO to look across time horizons.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	Same as Final Determination
Method	Forecast medium to long term benefits from new operability solutions (including the NOA pathfinders and other operability measures). We expect this to measure to include, where applicable, estimated: i. Saved balancing costs ii. Saved infrastructure costs iii. Monetised carbon reductions iv. Any indicative impact on the SZCP limit This should be underpinned by transparent, published benefit calculation methodology. We will discuss the final details of this measure, such as the calculation and presentation of benefits, as well as scope of solutions included, with the ESO as part of our ESORI Guidance Arrangements consultation.	Consistent with Final Determination, but with less details included
Quantitative expectations	n/a	n/a
Reporting frequency	Six-monthly	Not defined

Final Determination rationale and Draft Determination responses

The ESO was happy to report on this item as Regularly Reported Evidence and suggested this should be on an annual basis. As we are now performing an evaluation every six months, and progress in this area is important to the evaluation of Role 3, we have decided to require this on a six-monthly basis.

We also consider there would be benefits in linking this measure to the SZCP indicator in Role 1, as we expect many of the actions in this area are relevant to the ESO's zero-carbon operability goal.

No other stakeholders explicitly commented on this measure, although stakeholders commented more generally on the need to ensure the measurement of Role 3 benefits is transparent and robust. We agree with this and will require the ESO to set out its full calculation methodology. Where necessary, we will look to improve this for BP2.

3B. Consumer value from the NOA

Purpose: measures the consumer value from the ESO's actions to encourage alternative solutions in the Network Options Assessment (NOA).

Benefits: creates transparency around whether the ESO's NOA activities are delivering the benefits put forward in the Business Plan.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	Same as Final Determination
Method	Measures the level of forecast savings created by the ESO through actions to encourage alternative solutions in the NOA (not including NOA pathfinders). Underpinned by a transparent published benefit calculation methodology.	Consistent with Final Determination, but with less details.
Quantitative expectations	n/a	n/a
Reporting frequency	Six-monthly	Not defined

Final Determination rationale and Draft Determination responses

The ESO was happy to report on this item as regularly reported evidence and suggested this should be on an annual basis. In subsequent discussions with us, the ESO noted that whilst the NOA is an annual process, certain aspects such as Strategic Wider Works and the Connection and Infrastructure Options Note process, happen more regularly. As we are now performing an evaluation every six months, and progress on NOA is important to the evaluation of Role 3, and we have decided to require an update on a six-monthly

basis. Where forecasts benefits are not available because a NOA process has not occurred, the ESO can instead provide and update on its actions over the preceding six-months to create additional value in the annual NOA.

One stakeholder noted that the tracking of NOA benefits should be more robust. Although the stakeholder welcomed the inclusion of this item of regularly reported evidence, it suggested that this should track actual benefits, rather than forecast savings created by the alternative solutions in the NOA. The ESO noted that in its response that actual benefits would be unrealistic to track, noting many projects would not deliver benefits until after the end of the price control.

We agree with the ESO that actual costs benefits on NOA would be difficult to track and we are not clear how this could work in practice. However, we agree that the forecast savings need to be as robust as possible. We will work with the ESO to ensure there is transparency on the methodology used to calculate benefits.[84] We will also look to set requirements on the approach in the ESORI Arrangements Guidance where appropriate.

3C. Diversity of technologies in NOA processes

Purpose: measures the diversity of solutions considered to address network needs within the NOA suite of processes.

Benefits: creates transparency around whether the ESO is considering all solutions to network needs within NOA processes.

Final Determination

Performance measure parameter	Final Determination	Draft Determination
Type	Regularly Reported Evidence	Same as Final Determination
Method	Number and type of different solutions considered each year through the NOA and any NOA pathfinder tenders, as well as the ESO's explanations of the actions taken to increase the pool of solutions. Should include number of parties that: i. Express interest ii. Are participants within NOA / NOA pathfinder tenders iii. Are successful / receive contracts	Consistent with Final Determination, but with less details.

[84] The ESO provided some information on this in its 2019/20 End of year Report: https://www.nationalgrideso.com/document/168786/download

Performance measure parameter	Final Determination	Draft Determination
	Numbers for the NOA and the NOA pathfinders can be presented separately for transparency.	
Quantitative expectations	n/a	n/a
Reporting frequency	Six-monthly	Not defined

Final Determination rationale and Draft Determination responses

In its response, the ESO suggested this would not be beneficial to measure. The ESO noted its licence requires it to be technology agnostic, and as it does not control the input or the output on NOA, setting a target would not be appropriate. Conversely, another respondent considered this as a key area to measure progress and suggested that this item should be considered for inclusion as a Performance Metric.

We recognise that the ESO cannot control fully what solutions to network needs come forward. However, it plays a vital role in promoting a level playing field and ensuring its processes are coordinated and accessible to all types of parties. We consider that this measure, combined with the other Role 3 measures, will help provide transparency on the ESO's success in this area. The evaluative nature of the incentives helps ensure that the ESO is measured only on actions it has taken and outcomes it can control.

Following its Draft Determination response, we have engaged with the ESO to clarify this would be Regularly Reported Evidence rather than a Performance Metric with performance benchmarks. The ESO is content to report on diversity of technologies in the NOA on a six-monthly basis. However, it would prefer this to be focussed on just the NOA, and not the NOA pathfinders, given the smaller number of options in the latter. We think it is important there is transparency on all participation in all NOA processes and suggest instead that the ESO's presents the data on a disaggregated basis. We will discuss the final reporting details further with the ESO as part of our ESORI Arrangements Guidance consultation.

Performance measures not taken forward

Table 21 summarises other performance measures suggested by stakeholders, that we have not decided to take forward, and our reasons for this.

Table 21: Ofgem response to other suggestions for performance measures

Type of measure	Stakeholder suggestion	Ofgem response
Performance metric	A metric measuring ESO performance in reforming balancing markets	We consider that the ESO's performance in this area is sufficiently captured through the competitive procurement metric; data and narrative on the diversity in different ESO markets; our measurement of the ESO's successful delivery of balancing reform milestones; and stakeholder satisfaction surveys for Role 2.
Performance metric	A metric to demonstrate that new parties who want to participate in balancing services are not being adversely treated by the ESO.	
Regularly Reported Evidence	Percentage of bilateral contracts held by the ESO, and of these, the percentage that will not end before 2023	We think the ESO's progress on introducing competitive procurement is best captured through the Performance Metric 2A. We will review whether this provides enough transparency about the use of bilateral contracts and ask the ESO to produce additional supporting information if necessary.
Regularly Reported Evidence	MWh of fossil fuels dispatched for non-energy reasons	These suggestions have informed our decision to introduce new performance measure 1G (Carbon intensity of ESO actions).
Regularly Reported Evidence	Carbon content of units used to deliver balancing services each month	
Regularly Reported Evidence	Percentage of data sets held by the ESO that have been published in full on the data portal	As set out in Chapter 4 of the Core Document, we are introducing a new requirement for companies to use Energy System Data in accordance with Data Best Practice guidance. In particular, the guidance will include the principle of Energy System Data being treated as "presumed open". We expect the ESO to follow these obligations.
Regularly Reported Evidence	Percentage of Technology Advisory Council (TAC) members drawn from non-traditional participants in the energy system	We are unsure this measure would provide meaningful information on the ESO's delivery of Business Plan benefits. However, we will closely monitor feedback from stakeholders on the TAC to ensure it is successfully representing a diverse mix of energy system parties.
Regularly Reported Evidence	Ensuring all products can be revenue stacked where possible	We are unsure what data would be used to define this regularly reported evidence. However, agree with these expectations and will make them clear in our ESO's Roles Guidance. We also expect any issues with revenue stacking to be picked up through satisfaction surveys.
Regularly Reported Evidence	Standardisation of terms and conditions across all the products and services offered by ESO and DNO/DSOs	
Performance metrics / Regularly Reported Evidence	Measures on 'Data maintenance' in terms of the ESO's management of the Capacity Market Register, data validation	We believe the existing measures will ensure that the performance of the EMR DB can be appropriately assessed. Such measures include: the regularly reported evidence, the CM and CfD Customer and Stakeholder

Type of measure	Stakeholder suggestion	Ofgem response
	and fraud and error checks.	Satisfaction Surveys; and an assessment of the ESO's completion against the delivery schedule. In addition, we produce an annual report[85] on the EMR DB's performance of its functions in relation to the CM and CfDs.

[85] As per Regulation 83 of the Electricity Capacity Regulations 201485 (as amended).

Appendix 3 – Ofgem views on stakeholder satisfaction survey design

As set out in Chapter 3, for RIIO-2, the ESO will commission six-monthly surveys from an independent, reputable market research company. Key aspects, including the questions, survey method, participants and the performance benchmarks will be approved by Ofgem. This appendix set outs our current view on the design of stakeholder surveys for the ESO's RIIO-2 price control.

Our current expectations on survey design

In advance of introducing the new stakeholder survey process we will work with the ESO and its independent market research company to finalise the detailed survey design. Below we set out our current expectations for key areas of the survey design.

Survey method

We anticipate that the survey will be undertaken either by phone and/or online. We would like to discuss and agree which method is most appropriate with the ESO and its independent market research company.

Participants

We anticipate that the survey will include a wide selection of relevant stakeholders who have had material interactions with the ESO's services. The exact survey participants will be determined by the ESO's stakeholder contacts database. We expect the ESO to maintain up to date contact details of its stakeholders.

Questions

We are conscious of the trade-off between detailed survey questioning and response fatigue. Our aim is for the survey to extract valuable insights to inform the ESO's performance evaluation without being burdensome for the ESO's stakeholders.

It is important that the survey measures stakeholder satisfaction with each of the ESO's roles. To ascertain a quantitative score and more qualitative stakeholder insight, we anticipate an approach based on the following question being asked for each role:

a) The ESO's Role [1], [Control Centre Operations], includes key activities such as [real-time system operation], [system restoration] and [provision of data and forecasting]. The ESO's recent activities in this area include [Deliverable A], [Deliverable B] and [Deliverable C]. Overall, on a score of 1-10, how would you score the ESO's performance in this Role?
b) Please explain your reason for this score.

We would like to discuss and agree the survey text with the ESO and its independent market research company.

Performance benchmarks

We intend to develop benchmarks for the survey results so there is clarity on what scores would be below/meeting/exceeding expectations. We consider that an average of CSAT and SSAT scores from the period 2017/18 to 2019/20 (7.5 / 10) could be a sensible starting point for further consideration. An alternative option would be for the survey to ask respondents directly whether the ESO's performance is considered to be below/meeting/exceeding their expectations. We would like to discuss and agree the survey text with the ESO and its independent market research company before finalising the benchmarks.

Appendix 4 – Updated IT RAG assessment

This annex contains a summary of our updated assessment of the ESO's IT capex projects, which has informed our Final Determinations in Chapter 4.

We carried out this assessment following the submission of additional evidence from the ESO following the Draft Determinations, using the Red Amber Green (RAG) assessment approach described in Chapter 4. For more information on the assessment methodology, please see the Atkins IT&T ESO Report published as a technical annex alongside our RIIO-2 Draft Determinations.[86]

Assessment of ESO IT&T costs

Project	Cost for BP1 (£m)	Justification	Definition	Resource	Cost assurity
110 Network control	8.10	Green	Green	Amber	Amber
120 Interconnectors	2.97	Amber	Amber	Amber	Amber
130 Emergent technology and system management	1.49	Green	Green	Amber	Amber
140 ENCC operator console	0.74	Green	Green	Green	Green
150 Operational awareness and decision support	2.13	Amber	Amber	Amber	Amber
170 Frequency visibility	1.15	Green	Amber	Amber	Amber
180 Enhanced balancing capability	18.23	Green	Green	Amber	Amber
190 Workforce and change management tools	0.00	Green	Green	Green	Green
200 Future training simulator and tools	0.00	Green	Green	Green	Green
210 Balancing asset health	2.55	Green	Amber	Amber	Amber
220 Data and analytics platform	8.91	Green	Green	Amber	Amber
240 ENCC asset health	4.08	Green	Green	Green	Amber

[86] See technical Annexes – 2: https://www.ofgem.gov.uk/publications-and-updates/riio-2-draft-determinations-transmission-gas-distribution-and-electricity-system-operator

Project	Cost for BP1 (£m)	Justification	Definition	Resource	Cost assurity
250 Digital engagement platform	2.52	Green	Amber	Amber	Amber
260 Forecasting enhancements	0.30	Green	Green	Green	Green
270 EU regulation	16.20	Green	Green	Green	Green
280 GB regulation	5.40	Green	Green	Green	Green
290 Charging and billing asset health	1.80	Green	Green	Amber	Amber
300 Charging regime and CUSC changes	1.23	Amber	Green	Amber	Amber
320 EMR and CfD Improvements	2.11	Green	Green	Amber	Amber
330 Digitalised code management	0.00	Green	Green	Green	Green
340 RDP implementation and extension	6.08	Green	Green	Amber	Amber
350 Planning and outage data exchange	0.80	Green	Green	Green	Green
360 Offline network modelling	2.00	Amber	Amber	Amber	Amber
380 Connections platform	1.44	Green	Green	Amber	Amber
390 NOA enhancements	6.08	Green	Green	Amber	Amber
400 Single markets platform	6.24	Green	Green	Amber	Amber
410 Ancillary services settlements refresh	2.28	Amber	Green	Amber	Green
420 Auction capability	0.00	Green	Green	Green	Green
450 Future innovation productionisation	1.20	Green	Amber	Amber	Amber
460 Restoration	2.70	Green	Amber	Amber	Amber
480 Ancillary services dispatch	4.05	Amber	Amber	Amber	Amber

Project	Cost for BP1 (£m)	Justification	Definition	Resource	Cost assurity
500 Zero carbon operability	9.14	Green	Green	Amber	Amber
510 Restoration decision support	0.45	Green	Green	Green	Green
Data Management / Archiving -Tool / Licensing / Implementation	3.18	Green	Green	Green	Green
Digital IT Operations	1.34	Green	Green	Green	Green
ERP (S/4HANA)	2.31	Green	Green	Green	Green
Wokingham ENCC Capex	1.99	Red	Red	Red	Red
Project TERRE Central Project	1.65	Red	Red	Red	Red
Hosting	9.52	Green	Green	Green	Amber
LAN infrastructure	3.37	Green	Green	Green	Amber
Modern Workplace - End User Compute	1.51	Green	Green	Green	Amber
NOC	1.68	Green	Green	Green	Green
Other IT Expenditure	7.82	Green	Green	Green	Green
Service Now upgrade and Capability improvements	1.01	Green	Green	Green	Amber
SuccessFactors (MyHub) Upgrade and Enhancements	0.53	Green	Green	Green	Green
T2 CNI Infrastructure Upgrades and maintenance	2.39	Green	Green	Green	Green
WAN infrastructure	1.81	Green	Green	Green	Amber

Appendix 5 – Glossary of ESO-specific framework terms

Table 22: Glossary of ESO-specific regulatory framework terms

Term	Description
Activity	A subset of responsibilities within a Role with specific expectations and deliverables attached to it, as outlined in Table 5 of this document.
BP1	The ESO's Business Plan for April 2021 to March 2023
BP2	The ESO's Business Plan from April 2023
Business Plan	Submission from the ESO containing its proposed costs and deliverables for a (initial) two-year period. We assess this to make determinations on incentives.
Cost benchmark	Provides our view on the appropriate level of expenditure for the ESO's Business Plan activities. It is a key input into our evaluation of the ESO's performance under evaluation criteria (e) of the incentives scheme.
Deliverable	A specific delivered output within an Activity which has associated milestones and success measures.
Delivery Schedule	A grouping of deliverables for a Role / the Business Plan. The ESO's final Delivery Schedule for BP1 is published alongside this document as a technical annex.
Delivery Schedule grading	Our grading of the Delivery Schedule for each role, designed to set a clear reference point and align expectations in the incentives process. Outlined further in Chapter 3 and in Appendix 2.
DIWE	Demonstrably inefficient and wasteful expenditure
DIWE cap	The maximum value of DIWE Ofgem can disallow in a year.
DIWE principles	A set of principles intended to provide greater ex ante certainty about how and when ESO DIWE may be disallowed.
ERSG	The ESO RIIO-2 Stakeholder Group.[87]
ESO Performance Panel	A mix of independent experts and industry representatives that are responsible for reviewing the ESO's plans and performance, as well as performing an end of scheme evaluation of the ESO's performance.
ESO Roles Guidance	Sets out our expectations for how the ESO should comply with its obligations and meet and exceed our incentives expectations under its three Roles: control centre operations; market development and procurement; and system insight, planning and network development.
ESORI Arrangements Guidance	A guidance document which sets out the logistics and detailed mechanics of the incentives scheme, including guidance on how the ESO's performance should be evaluated, what it should report, and how we determine an incentive payment or penalty.
Evaluation criteria	The criteria used by the Performance Panel to measure the ESO's performance for each role.
Long term vision	The ESO's long-term vision for the energy system that includes the ESO's views on its own roles and responsibilities in future. This was set out alongside the ESO's December 2019 Business Plan submission, but may be updated where appropriate for subsequent Business Plans.

[87] https://www.nationalgrideso.com/our-strategy/riio/riio-2-stakeholder-group

Term	Description
Medium-term strategy	Outlines the ESO's strategy for progressing towards the Long-term vision over the five-year RIIO-2 period. This was set out alongside the ESO's December 2019 Business Plan submission, but may be updated where appropriate for subsequent Business Plans.
Performance measure	A measure of the ESO's performance relevant to the Business Plan, including Performance Metrics, stakeholder satisfaction and Regularly Reported Evidence.
Performance Metric	A numerical measure that enable us, stakeholders, and the Performance Panel to regularly track the ESO's performance delivering its Business Plan outcomes. They have clear ex ante performance benchmarks for below/meets/exceed expectations. They inform the evaluation against criteria (b) of the incentive scheme.
Performance benchmarks	Describes ex ante what outturn performance is below, meets and exceeds expectations for each Performance Metric.
Regularly Reported Evidence	Evidence that should be regularly reported by the ESO to inform informs the evaluation against evaluation criteria (d) of the incentive scheme.
Role	One of the three roles in the ESO Roles Guidance.
Value for Money (VfM) assessment	Considers the ESO's outturn expenditure spend against the cost benchmark, the outputs it has delivered, and the ESO's explanations for any changes in costs or outputs.