Consultation

RIIO-2 Sector Specific Methodology Annex: Electricity System Operator

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We are consulting on the design of the price control framework for the Electricity System Operator (ESO) under RIIO-2. This document sets out our proposals on the features of that framework, including roles and responsibilities, incentives and outputs, and remuneration of the ESO.

This document is an Annex to the RIIO-2 Sector Specific Methodology Core Document consultation and should be read alongside it.

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Executive summary

The Electricity System Operator (ESO) sits at the centre of our energy system. This rapidly changing system needs an ESO that proactively responds to system challenges and maximises consumer benefits across the full spectrum of its roles. We want the ESO to work closely with its stakeholders and other energy system parties to ensure there is a coordinated approach to system planning and operation. We also want a more dynamic ESO that readily responds and adapts to new developments.

From April 2019, the ESO will be a legally separate entity within National Grid group. This will reduce the potential for real or perceived conflicts of interest in the ESO's activities and increase its independence from National Grid Electricity Transmission (NGET). As a consequence of this separation, we propose to introduce a bespoke price control for the ESO under RIIO-2. The ESO, as an asset-light, service-focused business, is markedly different from the other sectors covered by the RIIO-2 price controls. Its price control is therefore likely to differ from that of the other sectors.

We want the ESO to play a leading, proactive and coordinating role in the transformation to a low carbon energy system by delivering sustainable, resilient and affordable services that provide value for existing and future consumers. The ESO should achieve this through its direct activities and through its ability to influence the whole energy system.

The RIIO-2 price control, to come into effect in April 2021, is fundamental to delivering these aims. It follows the introduction, in April 2018, of a new incentives framework for the ESO. This framework rewards or penalises the ESO based on how well it has delivered a number of key outcomes we have set for it. The framework also puts stakeholders at the heart of the ESO's forward planning and performance assessment, and ensures the ESO takes into account a broad range of views in performing its activities. These new arrangements strengthen our ability to effectively assess the ESO's performance, better address information asymmetries, and ensure the ESO focuses on overall outcomes-based goals rather than narrowly-defined, or short-term, targets.

We propose to introduce a price control for the ESO that builds on the work already well underway as part of our separation and incentives work. The new price control will follow the overarching RIIO-2 design principles, but will be tailored to reflect the unique nature of the ESO, and the expected changes in its activities across the price control period. The new price control will:

Build on the principles-based framework put in place for the new incentives scheme in order to ensure that the ESO's focus is on delivering good outcomes for consumers and the energy system as a whole. We will continue to scrutinise the ESO's costs and would take these into account in determining the level of the overall incentives reward or penalty, to ensure they are acting efficiently. The ESO's allowances will be determined on an activity-by-activity basis, categorised by risk, allowing us to deploy different remuneration levels based on the activity area in question.

Put stakeholders at the heart of both the ESO's business planning and assessment of its performance. It will do this by building on the ESO Performance Panel and the annual processes for evaluating ESO performance that were introduced in April this year. This will give stakeholders a strong voice in shaping the ESO's priorities, and in assessing its performance.

Have a shorter business planning cycle to provide flexibility to adapt the activities of the ESO in response to changes in the energy system. We propose that the price control be based upon two-year plans. This will offer regular opportunities to 'reset' ESO priorities.

We propose to put robust arrangements in place around the ESO's business planning and performance assessment to ensure we continue to appropriately fund, incentivise and reward longer-term initiatives. Following two business plan cycles (ie after four years), we will assess the effectiveness of the new arrangements and consider whether to continue with the biennial approach, or re-align with the other transmission sectoral price controls.

Use historical, international and cross-sectoral benchmarks, to enable us to assess the ESO's costs and performance. We intend to build on the indicators we already gather and triangulate evidence from different sources to ensure we are in a strong position to scrutinise how effectively and efficiently the ESO is delivering the outcomes we set for it.

No longer rely on a Regulatory Asset Value (RAV)-based approach. We propose to move away from the traditional RAV-based approach to remunerating the ESO, and instead determine allowances on an activity-by-activity basis. These activities will be defined and then categorised by the level of risk borne by the ESO. ESO costs for each category of activity will be passed through with a different level of margin assigned to each based on the level of risk.

We welcome stakeholder feedback on the proposals we set out in this consultation. Please send your responses to RIIO2@ofgem.gov.uk by 14 March 2019. Following the conclusion of this consultation, we intend to consider responses carefully, before issuing a decision on our price control design in spring 2019. Detailed design work around specific aspects of the price control will continue through 2019. We then expect to commence the necessary licence and code changes to give effect to our proposals.

This document, and the decision to follow, will support business planning for the ESO's price control. Our intention is that the design and implementation of the ESO price control will follow the same timelines as the other RIIO-2 sectors, unless we have strong reason to depart from them.

1. Document structure

This document is intended to be read alongside the RIIO-2 Sector Specific Methodology to gain the full context and detail on each of the topic areas. To aid readers we have set out the structure of this document and how its content fits within the wider RIIO-2 publications.

Structure of this document and associated documents

1.1 In July 2018 we published the RIIO-2 Framework Decision which set out our proposed approach to the RIIO-2 price control, and highlighted the main areas of proposed change from the current price control, RIIO-1. This consultation comprises the RIIO-2 Sector Specific Methodology (Core Document) and sector specific annex documents for gas distribution (GD), gas transmission (GT), electricity transmission (ET) and the Electricity System Operator (ESO). The sector specific documents are intended to be read alongside the Core Document.

The core document

1.2 The Core Document provides detail on how we propose to apply the RIIO-2 Framework Decision to areas that are relevant across the sectors. The proposals in the Core Document apply across the GD, GT and ET networks, and some elements apply to the ESO.

1.3 We summarise the key interlinkages between the Core Document and this ESO-specific document in Chapter 2 – Introduction. The Core Document and other associated documents are available on our website.

This document

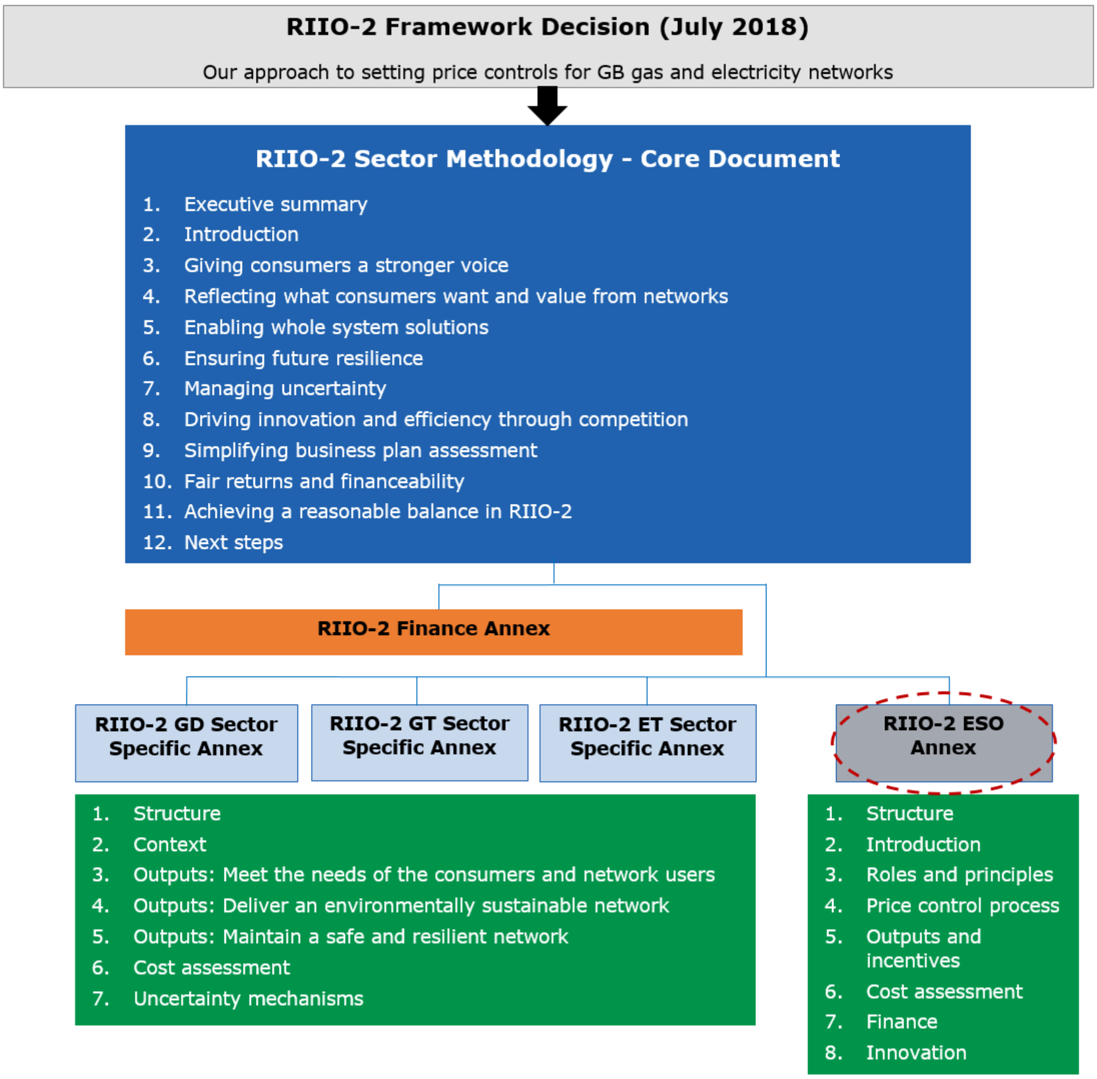
1.4 This document is focused on the application of the RIIO-2 Framework, established as part of the RIIO-2 Framework Decision, to ESO-specific issues. It sets out our sector specific views that will inform the ESO's business plan.

1.5 The ESO sector specific consultation document is structured as follows:

- Chapter 2 – Introduction: provides some context and background to our proposed price control of the ESO under RIIO-2.
- Chapter 3 – ESO Roles and Principles: presents potential changes to the roles and responsibilities of the ESO, and the performance principles that apply to it.
- Chapter 4 – Price Control Process: summarises how we envisage the new price control functioning in practice, including its duration.
- Chapter 5 – Outputs and Incentives: details our proposed incentives regime for the ESO.
- Chapter 6 – Cost Assessment: outlines our approach to scrutinising the ESO's costs, and how we aim to ensure that any changes in cost are justified.
- Chapter 7 – Finance: details the financial arrangements and remuneration models that we propose to apply to the ESO.

- Chapter 8 – Innovation: details our thinking on ESO-specific issues arising from our proposed changes to innovation funding mechanisms.

Figure 1: RIIO-2 Sector Methodology document map



How to respond to this consultation

1.6 We want to hear your views on this consultation. Please send your response to RIIO2@ofgem.gov.uk by 14 March 2019.

1.7 Please refer to Chapter 2 of the Core Document for further detail on how to respond, data and confidentiality, and how to track the progress of the consultation.

2. Introduction

This chapter provides some key background and context to our proposed price control of the Electricity System Operator under RIIO-2.

2.1 The Electricity System Operator (ESO) has an integral role to play in the energy system. As the system changes so does the role of the ESO. We want it to take a more proactive approach to managing the energy transition and supporting system planning. The RIIO-2 price control presents an opportunity to ensure the funding and incentives arrangements for the ESO align with what we expect it to deliver for consumers and the energy system.

2.2 The ESO's funding is currently set as part of the National Grid Electricity Transmission (NGET) price control. With its legal separation from NGET[1], within the wider National Grid group, coming into effect in April 2019, we want to design a bespoke price control for the ESO that reflects both its important role in the energy transition, and its markedly different nature from the other RIIO-2 sectors. This new price control would come into effect from the end of the RIIO-T1 control in April 2021.

2.3 In this chapter, we provide a short overview of the current funding and incentives for the ESO and our case for change.

Overview of the current price control

2.4 The ESO's current funding for its internal costs and incentives come from several different sources:

- **RIIO-T1**: Its internal costs[2] are currently funded via the NGET RIIO-T1 price control. This places general obligations on the ESO, along with NGET, to deliver certain outputs (for example around customer satisfaction). Its level of allowed revenue is determined via a calculation of its Regulatory Asset Value (RAV) times the Weighted Average Cost of Capital (WACC), plus depreciation and other allowed costs not entering the RAV. The ESO is incentivised to keep its costs down through the application of a sharing factor (50%) on any difference between allowed costs and actual spend. The allowed revenue is recovered from users of the transmission networks (generators and suppliers) via Transmission Network Use of System (TNUoS) charges.

- **ESO regulatory and incentives scheme:** In April 2018, we introduced a new incentives scheme for the ESO, based around an ex post evaluation of its performance against certain outcomes we set for it to achieve. This scheme replaced a previous incentives framework that set mechanistic ex ante targets for the ESO to achieve on certain metrics. We introduced the new scheme as we were concerned that the old framework was not functioning as effectively as it could have done for consumers. Specifically, we were concerned that it was difficult to independently verify the appropriate level for the ESO's targets. We were also concerned that the old arrangements did not incentivise

[1] Ofgem, Consent to partially transfer an electricity transmission licence held by National Grid Electricity Transmission plc to National Grid Electricity System Operator Limited, September 2018
[2] Internal costs are the operational and capital costs the ESO incurs in operating its business (eg human resources, IT costs). It excludes external costs such as those associated with the balancing of the electricity system.

the ESO to be proactive in responding to system changes – rather it encouraged the ESO to focus on delivering against narrow metrics, potentially at the expense of broader positive initiatives. The new arrangements specify seven principles for the ESO's activities and its performance against these principles determines the amount of the ±£30m it will be rewarded or penalised at the end of each year. Industry stakeholders are central to the new scheme. We have convened a Performance Panel, made up of industry and independent experts, to scrutinise the ESO's plans and performance at the start, middle and end of each year. The ESO is also required to consult with industry in developing its forward plan each year.

- **Electricity Market Reform (EMR) incentives:** The ESO is the delivery body for some of the government's EMR reforms. It is responsible for activities including producing annual Electricity Capacity reports, administering key elements of the Capacity Market and allocating Contracts for Difference. The ESO, in its function as EMR delivery body, has incentives around customer and stakeholder satisfaction, dispute resolution and demand forecasting accuracy.

2.5 As part of our design of the new RIIO-2 price control for the ESO we want to make sure the funding and incentives arrangements are coherent. At present, there may be slight tensions between, for example, RIIO-1 funding arrangements for the ESO, which will incentivise it to reduce internal costs, and the new incentives regime, which encourages it to spend where doing so can deliver value for money and whole system benefits. We aim to resolve any potential conflicts of this nature through the new price control.

Why change is needed

2.6 Our design of the price control framework for the ESO under RIIO-2 is the next step in our ongoing work to enhance the functioning of the ESO. From April 2019, the ESO will be a legally separate entity within National Grid group. This will reduce the potential for real or perceived conflicts of interest in the ESO's activities and, in particular, increase its independence from NGET.

2.7 The end of the RIIO-1 price control in March 2021, and the commencement of RIIO-2, represents an opportunity to build on our separation and incentives work. We want to strengthen requirements and incentives for the ESO to ensure it effectively manages system balance and operability, facilitates competitive markets and whole system outcomes, and supports competition in networks. In doing so, we aim to ensure that the ESO is set up to proactively and effectively adapt to changes in the energy system.

2.8 In our July RIIO-2 framework decision[3], we set out our decision to create a separate price control for the ESO, as a necessary consequence of its separation from NGET. There was strong stakeholder backing for our proposal to do so. We signalled at that stage our intention to assess alternative remuneration models for the ESO, to reflect its asset-light, service-focused nature. We also committed to reviewing the outputs and incentives that apply to the ESO, to ensure these are fit for purpose.

[3] Ofgem, RIIO-2: Framework Decision, July 2018

Links with other areas of the RIIO-2 price control

2.9 In general, we expect the overarching principles set out in the Core Document published alongside this consultation to apply to the ESO. In certain cases, the practical application of these principles may differ for the ESO.

2.10 For instance, we do not propose to introduce new or amended outputs for the ESO price control. Instead, we intend to build on the outcomes-based framework we have already applied through the new incentives regime. We expect the general spirit of the outputs and incentives messages set out in Chapter 4 of the Core Document to continue to apply to the ESO.

2.11 We discuss our general proposals in relation to innovation mechanisms in Chapter 8 of the Core Document. We expect the policies expressed in that chapter to apply equally to the ESO. In Chapter 8 in this consultation, we highlight certain specific considerations in relation to innovation in the case of the ESO.

2.12 In Chapter 8 of the Core Document, we consider whether certain institutions, potentially including the ESO, could undertake additional functions in relation to early and late competition. We do not discuss this potential role for the ESO in detail in this document. We will consider whether revisions to the ESO's principles are appropriate in light of stakeholder responses to our proposals on competition.

2.13 Our work on Enhanced Engagement and Whole Systems are also relevant to the ESO. Our positions in this area are covered in Chapters 3 and 5 of the Core Document. We generally expect the overall Enhanced Engagement measures to apply to the ESO, though we cover some ESO-specific considerations in Chapter 4 of this consultation. In addition, we have considered the applicability of certain aspects of our work on Resilience to the ESO. In general, we do not expect the proposals in Chapter 6 of the Core Document around asset and workforce resilience to apply to the ESO, though we do expect the cyber and physical security proposals to apply to it.

Related initiatives

2.14 Our work to design a new price control for the ESO has links and dependencies with a number of other important pieces of work that are currently underway across Ofgem and government. We note some of these below.

2.15 Our intention is that the design of the ESO price control will follow the same timelines as the other RIIO-2 sectors, unless we have strong reason to depart from them. Following careful consideration of responses to this consultation, we aim to issue a decision on the design of the new price control for the ESO in spring 2019. This would enable us to make licence and code modifications so that the new price control can come into effect in April 2021. This would also enable the ESO to develop draft versions of its business plans, obtain stakeholder feedback, and finalise these prior to the start of the new price control period.

2.16 **ESO incentives**: The new ESO incentives scheme is currently in operation, and the ESO Performance Panel has been convened. We intend to monitor the functioning of the new incentives closely, and apply any learning to the new price control as appropriate.

2.17 **Code governance reform:** The ESO currently administers three industry codes, and we do not propose in this consultation to alter the ESO's responsibility for these codes. Ofgem and BEIS recently announced joint work aimed at reforming aspects of the energy market – the governance of industry codes is among the areas that the project will review. We will engage with this work as it progresses, and adapt the roles and responsibilities of the ESO as necessary.

2.18 **Capacity Market review**: The Government will continue to review the scheme in line with its underlying statutory duty, and are grateful for inputs received so far, but will confirm next steps and timings for the Five Year Review in due course.[4] [5] BEIS' review may propose significant changes to the Capacity Market framework, which may have an impact on the roles and activities of the ESO in its position as EMR delivery body. We will engage with these reviews as they progress to ensure our thinking in relation to the ESO's roles and responsibilities is joined up.

2.19 **Review of balancing services charges:** The ESO recovers its (external) costs of operating the transmission system through Balancing Services Use of System (BSUoS) charges. There are questions about how these charges work and, to address these, we have asked the ESO to launch a taskforce under the Charging Futures Forum arrangements.[6] As part of RIIO-2, our intention is that the ESO's internal costs would also be recovered through BSUoS. We will engage with the work of the taskforce going forward to ensure we address any interactions between the two pieces of work.

[4] Ofgem, Open Letter on the Five Year Review of the Capacity Market Rules and NGET's incentives, September 2018
[5] The UK government is working closely with the European Commission on the necessary steps for the GB Capacity Market (CM) scheme to be investigated as quickly as possible. This follows the judgement of the General Court of the Court of Justice of the European Union in Case T-793/14 and the standstill period it has imposed on the Capacity Market.
[6] Ofgem, Review of Balancing Services Charges, November 2018

3. ESO roles and principles

This chapter reviews the ESO's current roles and principles, and assesses whether these should change for RIIO-2. We propose to keep in place the ESO's current roles, though we will ensure that the framework is designed that these can evolve over time as the need arises. We propose to make some changes to the ESO's principles to reflect changes in the market since their introduction and stakeholder feedback to date.

ESO roles and principles questions

ESOQ1. Do you agree with our proposal to maintain the current roles and principles framework for RIIO-2?

ESOQ2. Do you agree with our proposals to keep the ESO's code administration, EMR delivery body, data administration, and revenue collection functions in place for RIIO-2? Do you believe that any of these functions (or any other functions) should be opened up to competition, either now or in future?

ESOQ3. Do you consider the ESO is best-placed to run early and late competitions?

3.1 In this chapter, we consider the roles and principles of the ESO, whether these should be adjusted for the RIIO-2 period and if so, how. First, we set out the overall outcomes we want to deliver and then outline the current arrangements, before exploring options for change and setting out our proposed way forward.

Outcomes we want to see

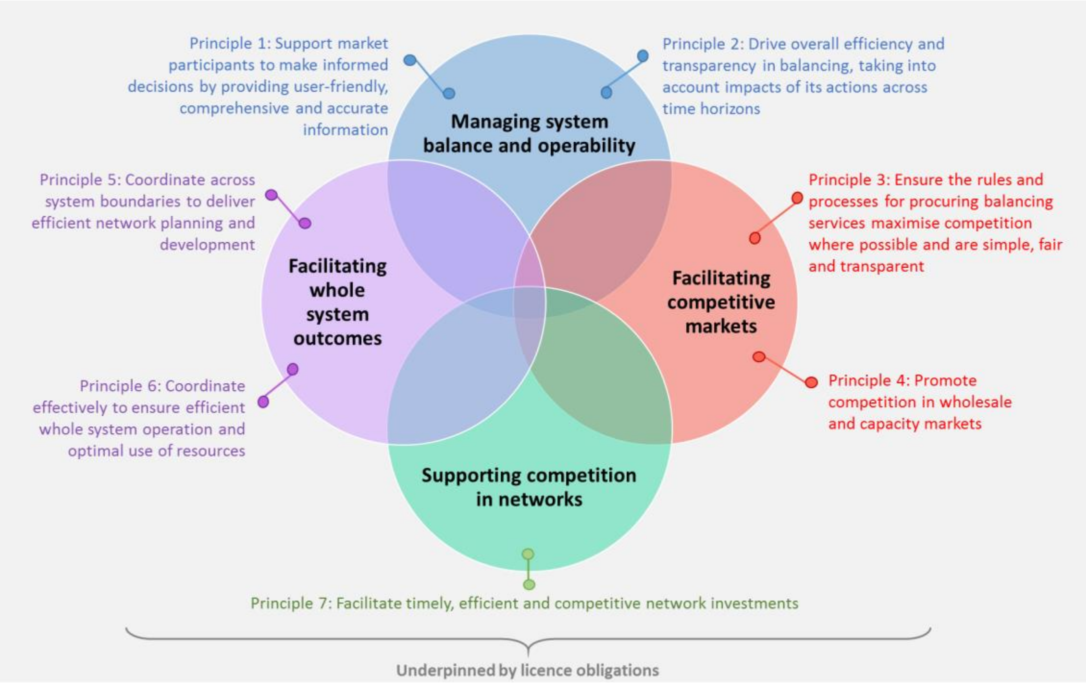
3.2 The ESO is an idiosyncratic entity, performing a wide variety of different roles, functions and activities, and interacting with a large number of industry parties. In general, as part of RIIO-2 we intend to introduce competitive or customer pressures where doing so is likely to provide consumer value. For RIIO-2, we want to ensure the ESO has a framework that enables it to play a leading, proactive and coordinating role in the transformation to a low carbon energy system by delivering sustainable, resilient, and affordable services that provide value for existing and future consumers. The ESO should achieve this through its direct activities and through its ability to influence the whole energy system. We also want to ensure that we put in place mechanisms that enable the ESO's roles and activities to evolve in a changing energy system.

Current arrangements

3.3 The ESO roles and principles were originally introduced in July 2017[7], and set out how we would expect the ESO to behave in order to comply with the licence obligations under Standard Licence Condition C16. The most recent version of the ESO roles and principles was published in February 2018[8].

[7] Ofgem, Future Arrangements for the Electricity System Operator: Working Paper on the Future Regulatory Framework, July 2017
[8] Ofgem, ESO Roles and Principles, February 2018

Figure 2: Current ESO roles and principles



3.4 The roles and principles were introduced as part of our new framework for incentivising and regulating the ESO. Their purpose is to help to align expectations between the ESO, Ofgem and stakeholders, support the enforceability of the ESO's obligations and create a more transparent framework overall. Under the new framework, the ESO must provide evidence of how it has performed in relation to the principles.

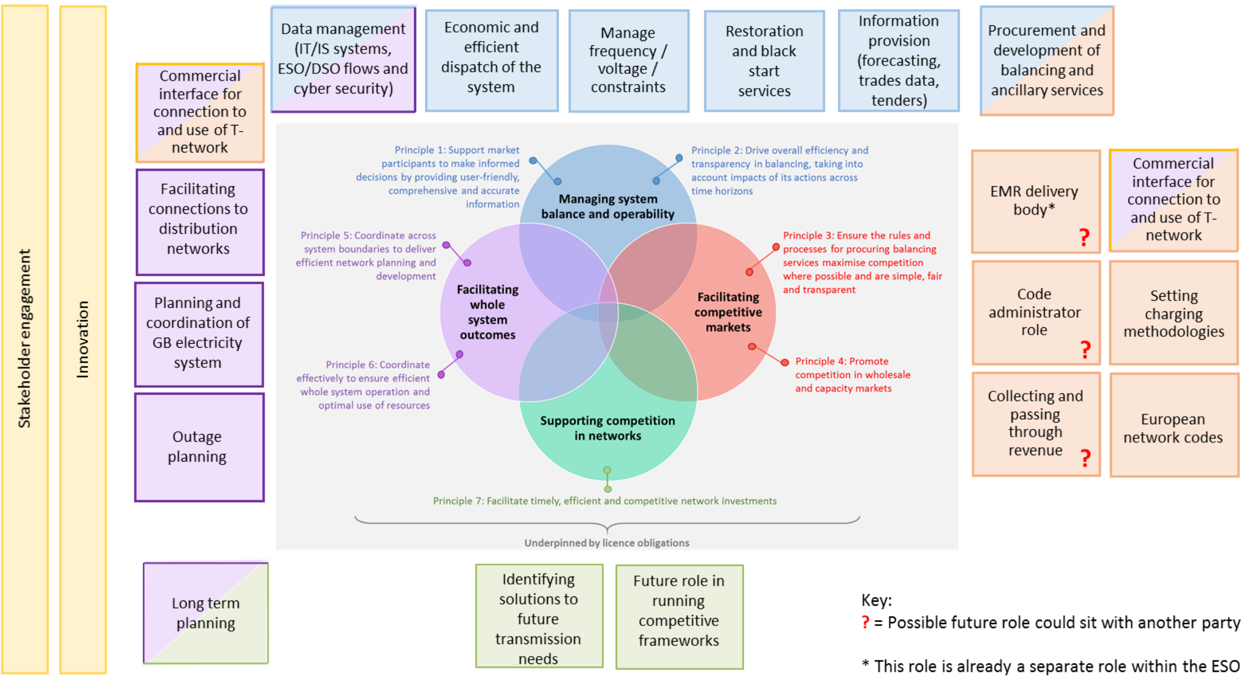
3.5 Through all of these roles are the cross-cutting themes of ensuring the ESO provides value to consumers, is transparent in its actions, and engages with industry and network operators in determining and delivering its priorities. The principles are deliberately drafted in a general way – our intention is that they should be considered as overarching requirements and behavioural standards that can be applied flexibly to a rapidly changing electricity industry.[9] The roles and principles are underpinned by the obligations contained within standard licence condition C16.[10]

3.6 The ESO carries out a number of different services and functions, which are mapped against these principles in Figure 3 below. A number of these services are very specific functions of the ESO, and place an obligation on it to be efficient, economic and coordinated when carrying out those functions. There are a few other services that could potentially be opened up to competitive pressures and provided by another party. For instance, the code administrator role is not as specific to the ESO and could be provided by, for example, another existing code administrator. Other examples of where this could be the case include the ESO's revenue management function (collecting and passing through revenue), aspects of its EMR delivery body role and the ESO's role in data administration.

[9] Appendix 1 provides further detail on principles-based regulation.
[10] A summary of the roles and principles and our expectations around them is included in Appendix 2.

3.7 At our 6 August workshop, stakeholders agreed that some of the ESO's current roles could be opened up to competitive pressures, and that this could benefit consumers in certain cases.[11] However, some felt that the fragmentation of services could lead to too much complexity. These stakeholders felt that we should ensure accountability rests with one organisation. We discuss which roles could be opened up to competition in the next section.

Figure 3: What does the ESO do?



3.8 For RIIO-2, we want a roles and principles framework for the ESO that ensures it maximises value for consumers in the activities it performs, and is sufficiently flexible to adapt to changes in market conditions. For instance, the changing role of distribution system operators (DSOs) may well affect ESO-DSO coordination. Therefore, ongoing review of the roles and responsibilities of the ESO relative to DSOs may be appropriate in the context of a changing energy system.

Options and issues to consider

3.9 In this section we set out some of the options for ensuring the ESO roles and principles are fit for purpose now, and are sufficiently flexible to adapt to system changes going forward. We first explore those roles that could be opened up to competition, and then assess potential changes to the ESO's principles.

[11] Ofgem, ESO RIIO-2 price control stakeholder workshop, August 2018

Opening up certain ESO roles to competition

Code administration

3.10 The ESO is the code administrator for the Connection and Use of System Code (CUSC)[12], the Grid Code[13] and the System Operator – Transmission Owner Code (STC)[14]. We analysed the most recent Code Administrator Performance Survey to understand how the ESO is performing as code administrator for each of the three codes it administers[15]. Overall satisfaction levels have increased for the CUSC and Grid Code since the previous year, with approximately 65% of organisations having stated that they are satisfied with the overall service provided by the ESO. Around 60% of organisations are satisfied with the overall service offered in relation to the STC. The main area for improvement that was noted was in relation to the types and accessibility of information provided. We note that since the introduction of the April 2018 regulatory and incentives framework, the ESO's CUSC and Grid Code performance has improved.

3.11 We received mixed stakeholder feedback on whether the ESO should perform the code administrator role in RIIO-2. Specifically, some stakeholders pointed out that other code administrators perform better than the ESO and that competition could improve the quality of service. They mentioned that there may be real or perceived conflicts of interest from the ESO administering the CUSC but also being able to raise CUSC modifications as a CUSC party, raising questions on the independence of the governance arrangements. Other stakeholders argued that as long as there is an open, transparent process then the ESO should remain involved in the development of codes as code administrator. They questioned whether the pace of change would be slower if another party was the code administrator. They suggested that as the ESO has subject-matter expertise, there may be benefits of it continuing as the code administrator.

3.12 Recently, Ofgem and BEIS announced a joint piece of work to review parts of the regulatory framework for the energy market. Among the issues being considered is code governance reform, as part of which code administration may be looked at.[16] This review may propose significant change to the governance of codes. This work should not preclude us from making changes to the ESO's functions in the short term. However, as there are potential benefits in retaining the ESO's code administration function, it may be appropriate to conduct the broader review of code governance arrangements before making any narrow changes to the ESO's responsibilities.

3.13 **Our proposal**: Although there is potential to separate this function, we consider that we should retain the existing code administrator roles as a function within the ESO. We have seen improvement in the code administrator performance over the past year as a result of the incentives scheme. We will look to ensure this can be

[12] The CUSC constitutes the contractual framework for connection to, and use of, the national electricity transmission system. The methodologies used to derive the charges that the ESO levies for connection to and use of the national electricity transmission system are also set out in the CUSC.
[13] The Grid Code covers all material technical aspects relating to connections to, and the operation and use of, the national electricity transmission system.
[14] The STC defines the relationship between the transmission system owners (onshore and offshore) and the system operator. The STC procedures (STCPs) set out the roles, responsibilities, obligations and rights of each party in further detail. It includes arrangements for transmission owners to make their services available to the ESO, and for the planning of transmission outages and co-ordination of investment planning for the development of the transmission system.
[15] Future Thinking/Ofgem, Code Administrators Performance Survey Findings 2018, October 2018
[16] Ofgem, Energy Codes Review, November 2018

revisited in future, subject to the outcome of the code governance work, by incorporating a distinct and separable allowance for the code administrator function within the price control.

EMR delivery function

3.14 The ESO's EMR delivery body role includes allocating Contracts for Difference, demand forecasting, running the Capacity Market auction (this role is awarded separately by BEIS), conducting the pre-qualification process, agreement management after a Capacity Market contract has been awarded and managing the appeals process. A few stakeholders suggested that aspects of the EMR delivery function could be sufficiently separable to be opened up to competition.

3.15 We have not received strong feedback or evidence from stakeholders to suggest there may be benefits for consumers in opening the ESO's EMR delivery body function up to competition. However, the ESO should continue to improve its performance as the EMR delivery body.

3.16 We note that the role of the auctioneer could be contracted by the Delivery Body to another party. We are mindful that there might be benefits from the same entity running the auction and the administration process (as there might be efficiencies if the entity that is judging the outcomes is also scrutinising the inputs and outputs). This may limit the elements of the EMR delivery body functions that could usefully be opened up to competition.

3.17 Currently the EMR delivery body is ring-fenced from the rest of the ESO. There is a question of whether the ring-fencing measures will be necessary after go-live of the ESO separation. We consider that if the risk of conflicts of interest are less after the ESO is separated, then we could consider loosening ring-fencing measures.

3.18 Our proposal: On the basis of the above, we do not consider that there is a compelling case to move away from the current arrangements. The EMR delivery body function is sufficiently separate from the rest of the ESO's activities, such that we could revisit this in future should it be beneficial to do so.

Data administration and information provision:

3.19 A small number of stakeholders suggested that the ESO's data administration and information provision roles could be performed by another party. However, we have not received any specific feedback to suggest there are benefits to consumers of another party performing these roles. The data administration and information provision roles, while separable, relate closely to other parts of the ESO's work, or could become important in future. For example, in future there may be a key role for distribution network operators (DNOs) in providing information on procurement and congestion management, to help the ESO carry out its day-to-day operability.

3.20 In general, a recurring theme of feedback has been that the ESO's role in providing information across a variety of activities could be improved. Our new incentives framework sets out our expectation that the data the ESO provides should be accurate, comprehensive and user-friendly. We intend to scrutinise the ESO's actions in relation to this principle as part of the operation of the new incentives scheme.

3.21 **Our proposal**: We do not propose to separate this function from the ESO. While stakeholder feedback suggests that the ESO's performance in this area could improve, we consider that the new ESO performance and incentives framework provides the necessary impetus for the ESO to do so.

Revenue collection and pass-through

3.22 The ESO is responsible for collecting and passing through TNUoS and BSUoS costs to market participants. Linked to this is the ESO's forecasting of these costs. Some stakeholders have suggested that another party could perform this role. They feel that the ESO could also forecast these costs more accurately to provide greater predictability for market participants. However, we have not had any specific feedback to date to suggest there are benefits to consumers of another party doing this role or any specific feedback to suggest that the ESO is performing badly in collecting and passing through revenue.

3.23 **Our proposal:** We consider that there isn't any compelling evidence to suggest another entity should perform this role.

Possible competition roles for the ESO

3.24 In the Core Document, we are consulting on the possibility of some competition functions being undertaken by certain institutions, potentially including the ESO. While the final decision on which entity is appropriate to undertake these functions will depend upon our consultation, we seek views on whether the ESO is well-placed to take on these functions. We set out our proposals in Chapter 8 of the Core Document, and request stakeholder feedback on these.

Changes to the ESO principles

3.25 The new regulatory and incentives framework, based on the roles and principles set out earlier in this document, was introduced in April 2018. So far, we have seen some positive changes in the ESO's behaviour as it has been refocusing its resources across all of the activities identified under the roles and principles (eg we have seen an increase in the resource assigned to code administration).

3.26 We want to continue using these types of principles to drive the ESO's behaviour for RIIO-2. Industry representatives have consistently supported the move to a more holistic, outcomes-based regime throughout our policy development and consultation process on the new incentives framework.

3.27 Stakeholders told us at our industry workshop in August that the principles are a good foundation for the RIIO-2 framework and they are supportive of us continuing in this direction of travel. However, they noted that in light of ongoing and future changes in the energy system these principles are unlikely to remain fixed for the RIIO-2 period. They also suggested a number of minor changes they felt would enhance the effectiveness of the principles in the near term and help to ensure industry, Ofgem and the ESO have a shared set of expectations around what they mean.

3.28 For the purposes of this consultation, we have considered two options for dealing with these changes:

- Option 1: Modify existing principles to reflect feedback. We note that the feedback we have received to date on the principles from stakeholders has been positive and we are starting to see ESO deliver positive initiatives in line with its all of its principles. Broadly, we consider the principles continue to capture the broad spectrum of ESO activity, but we recognise that they may need to evolve over time. Therefore, we are not proposing to make any fundamental changes at this stage, but we are considering refinements based on lessons learned and experiences so far. For instance, we may look to change or merge some of the principles, and make changes to the roles and principles guidance for 2019/20. We have already issued a separate call for evidence to understand how the current regulatory and incentives framework (including the roles and principles) could be improved for the 2019/20 incentive year. We are assessing this feedback and will provide an update separately in January. Overall we expect that operating the principles for three years from 2018-2021 will serve as a good foundation for their functioning in RIIO-2.

- Option 2: Create new principles. This option would require a step-change and create additional burden for the ESO, Ofgem and industry to recreate new principles, consult on them and to realign expectations with the new principles. This option may not deliver markedly different principles to those we have now. We have not received feedback to suggest that an overhaul of the principles is necessary or desirable.

3.29 As we don’t know for sure how the electricity system will change in the future, it is difficult to say with certainty what roles the ESO will have in it, and what principles should be applied. Therefore, any price control framework we introduce in 2021 should have appropriate mechanisms in place to allow the roles and principles to evolve over time. We think the biennial business planning cycle outlined in Chapter 4 – Price Control Process provides appropriate opportunities for the principles to be updated over time as necessary. Any changes to the principles would be consulted on with the ESO and industry in advance and will be introduced for the following regulatory cycle.

3.30 **Our proposal**: We consider that option one represents the most appropriate approach for revising the ESO’s principles. This enables us to make beneficial changes now without ruling out the possibility of further changes in the future as the ESO’s role evolves. We propose to consider the feedback received on the principles in the context of our RIIO-2 work as part of the potential revisions we are making to the regulatory and incentives framework to reflect lessons learned and experiences so far. Any changes will be consulted on separately in January.

Our proposals

ESO roles

3.31 We do not propose to make changes to the ESO roles now. By moving to a more flexible price control framework, we intend to lay the groundwork to enable us to revisit these roles in future. Separate to the issues outlined in this chapter, Chapter 8 in the Core Document published alongside this consultation, considers whether the ESO's role in relation to competition in networks should be expanded upon. We will consider responses to the questions posed in that separate document, and revisit the roles and principles to determine whether additional changes are appropriate. In addition, the changing DSO role is an uncertainty that may affect the nature of ESO-DSO coordination; therefore, ongoing review of the roles and responsibilities of the ESO relative to DSOs is appropriate in the context of a changing energy system.

ESO principles

3.32 We propose to make changes to the ESO principles to reflect the stakeholder feedback we have heard to date. The specific changes we propose to make will be set out in a forthcoming consultation as part of our revisions to the arrangements for 2019/20 ESO incentives framework.

4. Price control process

In this chapter we summarise our view of how the price control process as a whole will work, including price control frequency, business planning and stakeholder engagement.

We propose to move to a two-year business planning cycle, to maintain the Performance Panel, and to put in place certain requirements around the types of content to be included in the ESO's business plan.

Price control process questions

ESOQ4. Do you agree with our proposal to move to a two-year business planning cycled price control process for the ESO? If not, please outline your preferred alternative, noting any key features (eg uncertainty mechanisms or re-openers) that should be included.

ESOQ5. What stakeholder engagement mechanisms should be put in place for the ESO's business planning and ongoing scrutiny of its performance? Do you agree with our proposal to maintain, and build upon, the role of the Performance Panel?

4.1 We aim to put in place a price control framework for the ESO that not only has appropriate funding and incentives arrangements, but which functions effectively in practice. It is crucial that the business plans produced by the ESO reflect industry and stakeholder priorities, and the process for developing these plans, and scrutinising the ESO's performance against them, have stakeholders at their heart.

4.2 In this chapter, we consider the price control process that should apply to the ESO under RIIO-2. We first set out the overall outcomes we want to deliver and outline the current arrangements, before exploring options for change and setting out our proposal.

Outcomes we want to see

4.3 We want to put stakeholders at the heart of the ESO's price control and business planning process. Industry participants should have a strong voice in helping to determine the ESO's priorities and how it goes about delivering them, and in assessing its performance. We also want to ensure that we put in place a set of arrangements that can be flexible over time – so that we can account for, and adapt to, changes in the energy system and the nature of the ESO's roles and activities.

4.4 In general, we expect our design of the RIIO-2 framework for the ESO to follow the approach for all other sectors – for instance following the Challenge and User Group process set out in Chapter 3 – Enhanced Engagement of the Core Document. However, we may look to build on this in certain cases. Additionally, we are considering whether to adapt the timeframe for the price control of the ESO – we consider there is a case for moving to shorter business planning cycles within the price control to ensure there is scope to 'reset' ESO priorities on a more regular basis in order to reflect changes in the energy system.

Current arrangements

4.5 The ESO’s business plans and internal cost allowances are currently determined as part of the wider RIIO-T1 price control of NGET. In advance of the control, NGET (which included the ESO) submitted a single business plan for eight years from 2013-2021. The business plan was developed by NGET, with an opportunity for revisions to the draft plans based on feedback from Ofgem and stakeholders ahead of finalisation. There was a mid-period review of the price control to account for uncertainties related to material changes to outputs driven by clear changes in government policy and the introduction of new outputs required to meet the needs of consumers and other network users.

4.6 We aimed to increase stakeholder involvement in the development of the ESO’s plans, and in scrutinising the ESO’s performance, through the introduction of the current ESO Reporting and Incentive (ESORI) arrangements[17] in April 2018. The ESORI comprise:

- A requirement on the ESO to engage with stakeholders to produce a Forward Plan before the start of each regulatory year. This sets out the ESO’s longer-term vision and key actions it intends to take in order to meet the expectations described under the principles during the regulatory year. Through this process, the ESO develops a set of Performance Metrics so stakeholders can track its performance against the commitments made in the Forward Plan.
- A requirement of the ESO to produce within-year performance reports, including monthly reporting on the Performance Metrics, quarterly reports, a Mid-Year Report and an End of Year Report.
- A new panel of independent experts and stakeholder representatives (the Performance Panel)[18] who are responsible for reviewing the ESO’s Forward Plan and evaluating its performance based on clear ex ante evaluation criteria.
- An evaluative financial incentive, where we will make a decision on a reward or penalty for the ESO at the end of the year. This will be informed by the recommendation from the Performance Panel and be based on an ex-ante payment/penalty methodology.

4.7 The Performance Panel (‘the Panel’) meet with the ESO at three key points during the annual cycle – to challenge the ESO on its forward plans at the start of the year, and at mid-year and end of year to evaluate its performance. Its members are appointed by Ofgem – representatives are drawn from consumer and industry bodies, and also include academic and independent experts – with Ofgem as chair for (at least) the first year of the Panel. Its end of year report, which sets out its views on the ESO’s performance, forms a recommendation to us, to inform our decision on any financial reward or penalty to be applied.

4.8 The Panel is not a substitute for wider stakeholder input. The ESO’s stakeholder community provides input throughout the performance year, in particular at the start of the year, mid-year and end-of-year stages. The Performance Panel is able

[17] The Electricity System Operator Reporting and Incentive Arrangements: Guidance Document
[18] Electricity System Operator Performance Panel Working Paper

to comprehensively challenge the ESO on its performance, which is vital for tackling the information asymmetry between the ESO and Ofgem.

4.9 As part of RIIO-2, we have introduced an Enhanced Engagement model. This process involves Customer Engagement Groups and User Groups. It also includes a RIIO-2 Challenge Group and open hearings, both arranged by Ofgem.[19]

Options and issues to consider

Length of the business planning cycle

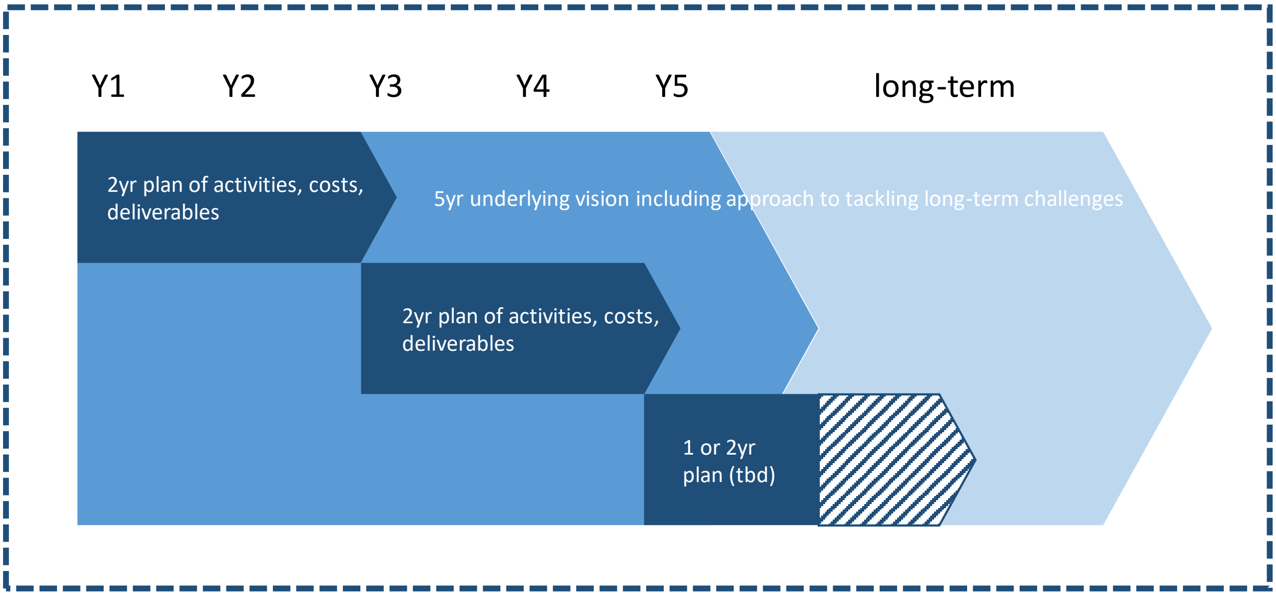
4.10 A key priority for the ESO price control under RIIO-2 is to ensure that it is sufficiently flexible to take into account potential changes in the roles and responsibilities of the ESO. The energy system is changing, and so too will the activities of the ESO. One way of providing this flexibility and allowing the roles and responsibilities of the ESO to be 'reset' is to adopt a shorter business planning cycle within the price control period.

4.11 We have considered a number of different options in relation to the duration of the price control. These include:

- Two-year cycle: Under this option the ESO would develop business plans on a biennial basis. The plans would look beyond this timeframe – we expect that they will look five or more years ahead in certain areas – though the first two years of the plan would contain more detail than later years. Allowances would be agreed for those two years. A visual representation of how we envisage this would work is included in Figure 4 below.
- Five-year cycle: Under this option we would adopt the same business plan timeline as the other RIIO-2 sectors. We could possibly adapt this slightly for the ESO by providing for annual checkpoints to 'release' funds in response to certain conditions being met. It is likely that we would need to put in place several prescribed mechanisms to re-open the price control to respond to unexpected changes and to manage uncertainty.
- Two-track cycle: Under this option we would determine operational costs on a biennial basis, and capital expenditure would be determined for a five-year period. This would provide certainty around some categories of longer-term spend, while continuing to offer a degree of flexibility to adjust priorities.

[19] Further details on the workings of the stakeholder groups as part of the RIIO-2 process are set out in Chapter 3 – Enhanced Engagement in the Core Document.

Figure 4: Envisaged two-year business planning cycle process



4.12 Adopting a shorter business planning cycle would provide greater opportunities for Ofgem and stakeholders to input into the ESO's business plans and refresh or reset them in response to market changes. This could be essential in the context of future uncertainties around the ESO's roles and responsibilities, for instance in relation to ESO-DSO interactions. Such shorter-term remuneration approaches already exist for a number of service-delivery focused organisations such as Elexon and the Data Communications Company (DCC).

4.13 We do not want a reduced price control duration to lead to short-term thinking on the part of the ESO. We would expect that the ESO would develop a business plan that looks across a five-year time horizon, and in some cases demonstrating with that plan the ESO's vision for its intentions beyond five years. We also propose to continue to use the ESO's incentives scheme to drive the ESO to deliver longer-term value.

4.14 We acknowledge the feedback we have received to date suggesting that certain investments, for example new IT systems, will be made over a longer time horizon, and that a longer-term control can help to provide certainty. However, we note that this is likely to be the case regardless of the period of time chosen for the price control – IT systems may have a lifespan of 8 years or more, which would go beyond the end of a five-year control even if the investment was made at the outset of the period. Capital investments are just as likely to be needed part way through the price control period. A two-year cycle would reduce the incentive to delay spending at the end of the price control so that these investments could be added to the allowances of the next price control. We will consider further what mechanisms or processes should be included in the price control to give the ESO sufficient certainty to commit to investments that may incur costs beyond a two-year period.

4.15 We consider that our proposal to move to a 'pass-through plus margin'-based approach[20] to remunerating the ESO's internal costs should help to provide certainty, and minimise any risk to the ESO, of making longer-term investments.

[20] Further details on our proposed remuneration model for the ESO is included in Chapter 8 – Finance.

This should support their ability to plan for the longer term regardless of the length of the business planning cycle.

4.16 A shorter business planning cycle that is 'staggered' from that of the other sectors may also have benefits. It would allow the ESO to develop its plans in 2023 in light of other companies' progress against their business plans since the start of the price control and would synchronise with the expected start of the new electricity distribution price controls. In future years this would provide the network companies with greater visibility of the ESO's business plans in developing their own. Following two two-year cycles, we would be in a position to assess how the new arrangements are working, and could choose to either continue with the rolling two-year cycles or to put in place an interim one-year cycle to ensure continued alignment with the other transmission sector companies.

4.17 We consider that the longer-term business plans, while they may have certain benefits in terms of the certainty they provide for the ESO, are likely to be more complex in nature. With a five-year control, for instance, we would expect to add uncertainty mechanisms and mechanisms for re-opening the price control to account for changes in the ESO's roles and responsibilities across the period, as well as unexpected events. Once these are added, the five-year control may not look dissimilar to a price control based on shorter business plan cycles. Additionally, these mechanisms would need to be prescribed in advance so as not to completely re-open the price control. At this stage, it is difficult to anticipate the types of uncertainty mechanisms that should be applied given the ongoing changes in the energy system. However, should stakeholders responding to this consultation strongly support a five-year business planning cycle, we would consider further how to design appropriate uncertainty mechanisms.

4.18 Under each of the options, we envisage continuing with the annual performance and incentives cycle. We would keep this under review, however, to ensure this does not place an undue administrative burden on the ESO or industry stakeholders. We would also expect to apply any lessons learned from the operation of the incentives scheme between now and the start of RIIO-2 to ensure it operates as efficiently and as streamlined as possible.

Approach to stakeholder engagement

4.19 Quality stakeholder engagement will be essential to ensuring that the ESO develops robust business plans that reflect stakeholder priorities, and that it is held to account in delivering those plans. We consider that the ESO Performance Panel has a key role to play in achieving these aims. However, the Panel alone is just one mechanism for building stakeholder views into the price control. We expect the ESO to continue, and build on, its efforts to obtain stakeholder views and use these to help determine its priorities and identify areas for improvement in its performance.

4.20 In Chapter 3 of the Core Document, we set out our proposed approach to stakeholder engagement across all RIIO sectors. The Challenge Group, User Groups and other forums will provide strategic and specific input to inform companies business plans. Should it be considered beneficial, these groups may continue to operate after the start of the new price control in April 2021. They may therefore provide additional routes for the ESO to get stakeholder views on its plans and priorities.

Business plan format and content

4.21 For other RIIO-2 sectors, we are developing prescribed data templates for certain elements of companies' business plans. Unlike other sectors, the ESO has no direct comparator, so there is less need for consistency in terms of the content and layout of business plans. We have considered whether we should develop templates and prescribe certain elements of the ESO's business plan content for RIIO-2.

4.22 In general, we expect that the principles that currently apply to the ESO in relation to the submission of their annual forward workplan would continue to apply in future – eg it must be well thought through and supported by evidence. We consider there may be benefits in building on these principles and setting out, at a high-level, the content we expect to see in the ESO's business plans. Doing so could help to align expectations between the ESO, Ofgem and industry stakeholders about the types of information we would expect to see in the ESO's business plan.

Our proposals

4.23 We propose to move to a model based on two-year business planning cycles within a longer price control, whereby the ESO develops its business plans in line with its longer term vision and allowances are agreed on a biennial basis. We consider that this model, when considered alongside our proposed remuneration model for the ESO, represents the best way of ensuring we have a price control that is sufficiently flexible to account for future uncertainties in the development of the energy system, while providing sufficient incentives, risk management and certainty for the ESO to plan for the longer term.

4.24 We propose to put stakeholders at the heart of the ESO's price control, as part of which we intend to continue to convene a Performance Panel, which was set up this year as part of the new ESO incentives scheme. We expect the ESO to continue, and build on, its current efforts to build stakeholder views into its business planning. The RIIO-wide forums may play a continued role in supporting the ESO in doing so.

4.25 In relation to the ESO's business plans for RIIO-2, we propose to build on the current requirements in relation to their annual forward plans, submitted as part of the new ESO incentives scheme. We would outline the types of content we expect to see in its business plan (we give an indication of what this content might consist of in Chapter 6 – Cost Assessment). As such, we would expect the ESO business plan to look slightly different to that of the other sectors as it would be framed around the ESO's performance principles. We will consider whether we ought to go further and prescribe data templates or other elements of the ESO business plan in the new year.

5. Outputs and incentives

This chapter outlines the outputs and incentives framework we propose to adopt for the ESO under RIIO-2. We propose to continue with the incentive arrangements introduced in April 2018 – which adopts an ex post, evaluative approach to the ESO incentives, rewarding or penalising the ESO depending on how well it has delivered against principles-based outcomes defined by us.

ESO output and incentives questions

ESOQ6. Do you agree with our proposed approach of using evaluative, ex-ante incentives arrangements for the ESO?

ESOQ7. Do you agree that we should continue to apply a single 'pot' of incentives to the ESO, and that this should be a symmetrical positive/negative amount? If not, why not?

5.1 We use incentives to encourage the ESO to innovate and continually improve its performance by exposing it to the types of reputational and financial risks and rewards that a company might face in a competitive market place. Incentives can be financial (achieving consumer benefit will lead to a financial reward), reputational (regular reporting and monitoring and public scrutiny will lead to reputational benefits) or legal (not meeting legal obligations can result in enforcement action). They can be defined and set on an ex ante basis (at the start of the regulatory year) or they can be determined on an ex post basis (after the regulatory year). They can be target driven (mechanistic) or evaluative or discretionary. Ex ante incentives tend to be target-based, while ex post incentives (by their very nature) tend to be awarded on an evaluative or discretionary basis. Incentives can also be symmetric (such as the current arrangements which are ±£30 million) or asymmetric (upside only, downside only or for instance +£30 million, -£10 million).

5.2 In this chapter, we consider the framework for outputs and incentives that should apply to the ESO under RIIO-2. We first set out the overall outcomes we want to deliver and outline the current arrangements, before exploring options for change and setting out our proposal.

Outcomes we want to see

5.3 We want to incentivise the ESO to consider and deliver value to consumers across the full spectrum of ESO activities and across short and longer term horizons, transitioning towards a smarter, competitive and more flexible electricity system. Furthermore, we want to simplify the regulatory framework by considering how we can potentially bring all the different elements together so they can work together as part of one coherent package.

5.4 As part of our overall approach to the design of the RIIO-2 price controls, we propose to apply incentives to companies' outputs where they deliver value for consumers above any baseline performance expectations that apply. We are likely to apply this differently for the ESO, where we currently have an outcomes-focused incentives framework, compared to other RIIO-2 sectors, though the general spirit of the principles set out in Chapter 4 in the Core Document will continue to apply.

The current arrangements

5.5 A range of financial and reputational incentives currently apply to the ESO – these are summarised in the table below.[21] To note, we do not include the RIIO-T1 price control sharing factor, which acts as an incentive to minimise the ESO's internal costs, in the table below. The sharing factor is covered in further detail in Chapter 6 – Cost Assessment. We also do not include the innovation incentives provided by the Network Innovation Competition and Network Innovation Allowance. These are covered in further detail in Chapter 8 – Innovation.

	Summary	Type
ESO regulatory and incentives framework	In April 2018, we introduced a new regulatory and incentive framework for the ESO which involves setting incentives on the ESO overall performance across all its roles and principles. Under the current regulatory and incentives framework the ESO can earn ±£30 million if it can demonstrate excellent performance across its seven Principles (which would involve demonstrating sufficient ambition in its plan, meeting deliverables and metrics in its plan, demonstrating good consumer outcomes in the future and positive stakeholder feedback).	Ex post (with ex ante evaluation criteria), financial and symmetric (±£30 million)
EMR delivery body incentives	In 2015, Ofgem introduced financial and reputational incentives on the Delivery Body to ensure efficient and economic delivery of the CM, to encourage transparency and to drive behaviours that promote competition and benefit consumers.[22] We also produce an annual report showing how well the ESO has performed its EMR delivery functions in relation to the Capacity Market.[23] As part of this, we look at the deliverables the ESO was required to provide over the reporting period and assess its performance against a number of key performance metrics. There are four financial and reputational incentives on customer and stakeholder satisfaction, dispute resolution, demand forecasting accuracy and on increasing the volume of DSR prequalified every year.	Ex ante and ex post, financial and symmetric
Black Start	The ESO has an obligation under the Grid Code to ensure sufficient Black Start capability is available and to set Local Joint Restoration Plans with relevant parties (including TOs and DNO). The ESO sets out an approved strategy and procurement methodology at the start of the year and submits evidence in an audited report on how it complied with its obligation. This report forms the basis for our decision on	Asymmetric (downside only) Financial

[21] Although the majority of the incentives have financial rewards/penalties attached to them, many also have a reputational element.
[22] The EMR Delivery Body is a separate function within the ESO.
[23] Ofgem, Annual report on the delivery body's performance of its functions in relation to the capacity market, June 2018.

	whether to disallow their costs.[24] There is continued work with government and industry on the future of black start. This includes the new arrangements coming out of the Emergency and Restoration network code.	
Environmental Discretionary Reward (EDR)	The RIIO EDR scheme is also applicable to the ESO until the end of March 2019[25]. This is an incentive designed to sharpen transmission companies' focus on strategic environmental considerations and organisational and cultural changes to facilitate growth in low carbon energy. The EDR scheme has a standard annual financial reward of up to £4m across all applicants.	Ex ante Financial Asymmetric (upside only)
Outputs and incentives on stakeholder engagement and satisfaction under RIIO-1	The stakeholder engagement incentive will only apply to the ESO until the end of March 2019, following which it will apply only to onshore TOs. • Under the incentive, network companies submit evidence on their engagement activities to us. Companies are then assessed by an independent panel, which scores companies' performance. The score determines the level of the reward, which for NGET can be up to 0.5% of if its base revenue. NGET (which until the end of March 2019 includes the ESO) Customer and Stakeholder surveys • NGET is required to survey its customers and key stakeholders once a year to obtain an overall 1-10 rating from them. The combined satisfaction score currently translates to a financial reward or a penalty of up to ±1% of base revenue.	Financial Symmetric (with time component) Ex post (with ex ante evaluation criteria)

Options and issues to consider

Outputs v outcomes (mechanistic v evaluative)

5.6 We want to incentivise the ESO to consider and deliver value to consumers across the full spectrum of ESO activities and across short and longer term horizons. Stakeholders have told us that incentives and penalties need to be designed so they drive performance in the right areas, without compromising other activities. If incentives are poorly-designed, there is a risk that the ESO is encouraged to focus on certain narrow areas of activity while ignoring others.

5.7 The current price control prescribes certain outputs the ESO has to produce, eg customer satisfaction indicators. We have found in the past (through the BSIS incentives scheme) that defined targets for the ESO can be difficult to independently verify to ensure they are sufficiently stretching for the ESO. With an outcomes approach to funding and incentives, there is a risk that the regulator sets perverse incentives that encourage the ESO to focus on certain narrow targets at the expense of other beneficial actions.

[24] Ofgem, Final Proposals for electricity SO incentives from April 2017, December 2016

[25] These arrangements will no longer apply after ESO legal separation in April 2019. From April 2019, the EDR will be a TO only incentive, applicable to onshore TOs.

5.8 An evaluative, outcomes-based approach could help to address difficulties in target-setting and ensure the ESO focuses on the bigger picture. It could be supported by a suite of indicators, with stakeholder and customer feedback at the heart of the ESO price control process – scrutinising business plans and annual performance. It may present some challenges in developing shared expectations of what we expect the ESO to deliver and in ensuring an appropriate level of predictability. However, the current incentives framework – which scrutinises the ESO's performance against different outcomes – has been in operation since April this year, and will continue to function up until the start of the RIIO-2 period. We have time, therefore, to factor in any lessons learned from its operation in practice prior to April 2021.

Financial v reputational incentives

5.9 Financial incentives can have a strong influence on the ESO's behaviour. We believe that well-designed financial incentives can encourage the ESO to innovate, take measured risks and continually improve its performance to the benefit of consumers.

5.10 As the ESO sits at the heart of the electricity system and it interacts with a large number of market participants, any incentive we introduce will also have a reputational element. This will be particularly the case if the incentives we introduce are transparent and reported publicly.

5.11 The current incentives and regulatory framework aims to do this by requiring the ESO to consult and report on its deliverables and includes an external ESO Performance Panel to assess the ESO's ambition and performance. This increases transparency and ensures stakeholders are a part of decision making, by giving them the opportunity to feed their views directly into the process. It also adds a reputational element to financial incentives as stakeholder feedback is used to evaluate the ESO's overall performance and ultimately informs the value of the financial reward or penalty. Furthermore, the ESO is required to produce performance metrics that it will report on publicly throughout the year. These also act as reputational incentives.

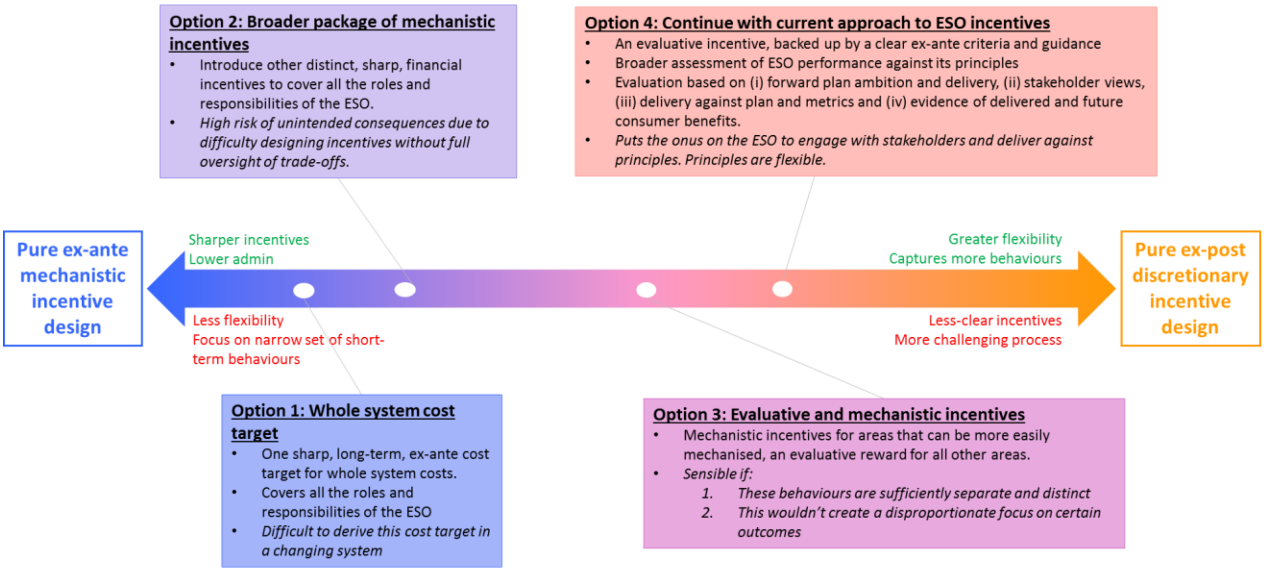
Ex ante mechanistic v ex post evaluative incentives

5.12 Ex ante, mechanistic incentives are defined as target-based incentives. These are set prior to the incentive year (ex ante) and the reward or penalty is directly determined by outturn data against the agreed target or output. In contrast, ex post, evaluative incentives have a reward or penalty that is determined by an evaluation process at the end of the year.

5.13 When considering the options for the design of incentives, we envisioned an infinite number of options along a spectrum from pure, ex ante mechanistic incentives to pure, ex post discretionary incentives, as depicted in figure 5 below. We have picked four options along the spectrum to analyse, which are: (1) whole system cost target (involving the setting of a single ex ante target for the cost of operating the whole electricity system), (2) broader package of mechanistic incentives, (3) evaluative and mechanistic incentives, (4) continue with current approach to ESO incentives. This draws upon our previous thinking in our impact assessment for the regulatory and incentives framework.[26]

[26] Ofgem, Impact Assessment for the 2018/19 Regulatory Framework for the Electricity System Operator, January 2018

Figure 5: Incentives options analysis



5.14 Option 1 would provide a clear, strong incentive for the ESO to reduce whole system costs, though would be practically difficult to implement, particularly in an energy system undergoing significant change. In addition, depending on how 'whole system costs' were defined, these would likely not be fully within the control of the ESO, which may weaken this option's effectiveness. Option 2 would provide certainty around our expectations, and would provide sharp incentives to deliver specified targets. However, it presents the potential for unintended consequences as the ESO would be incentivised to deliver against certain narrow metrics, which may be difficult to identify in advance, at the expense of wider potential beneficial actions. Option 3 would add an evaluative layer on top of the mechanistic targets, potentially reducing the risk of unintended consequences. However, it may lead the ESO to focus on those targets around which it has certainty in advance, leading to similar outcomes as the previous option in practice. Option 4 would build on our existing incentives framework. This framework is relatively new, so it is difficult to draw firm conclusions about its success or otherwise at this stage. However, we consider it sets a strong incentive for the ESO to be proactive in assessing its possible options and make efficient trade-offs to find the optimal solution.

Symmetric v asymmetric

5.15 As part of our design of the current incentives scheme, we carefully considered whether to apply symmetric or asymmetric incentives to the ESO.[27] We concluded that symmetric incentives (eg ±£30 million) are better-balanced and less likely to create distortions in the ESO's decision making process. The current regulatory framework has an overall incentive of ±£30 million, equal to ±£4.29 million per principle.

5.16 Asymmetric incentives can have an upside and downside (eg +£30 million, -£10 million), they can be upside only (eg +£30 million) or downside only (-£10 million). The ESO has put forward a case for having incentives with a greater

[27] Ofgem, Electricity System Operator Regulatory and Incentive Framework from April 2018, December 2017

upside, arguing a separate ESO has greater risk as it may have higher costs associated with securing capital investment.

5.17 Some roles and responsibilities of the ESO may be better suited to having asymmetric incentives (eg the Black Start cost disallowance can be considered as a downside only incentive). There is a risk that multiple asymmetric incentives may create some distortion overall as certain roles and responsibilities overlap. They would need to be designed carefully to minimise this risk. Ultimately, incentives should be proportionate to the level of value or detriment the activity or role in question creates, though this can be difficult to estimate in some cases.

Single v multiple incentives

5.18 For the ESO, we could apply a single incentive 'pot' covering all the ESO's roles and principles (eg ±£30million current regulatory incentives equally split between seven principles) or we could have multiple pots for each ESO activity or group of activities (eg £x amount per principle).

5.19 A single incentive split across the ESO's roles and activities reduces the risk that the ESO focuses its efforts narrowly in certain areas, at the expense of others. The framework still allows the ESO the opportunity to invest more in certain principles if it believes there is consumer value from doing so but this would have to be agreed with Ofgem and proposed and consulted on with industry as part of its Forward Plan process. The risk of multiple pots is that we end up creating a fragmented framework with too many incentives and opportunities for double rewards as a lot of the work the ESO does is interdependent.

5.20 The consultancy report we commissioned earlier this year from Reckon[28] highlighted that it might be suitable to break down the ESO's roles into discrete packages and create incentives for each of these areas. This is broadly consistent with our approach with the current incentives framework, where we have one monetary incentive that is equally split between seven principles.

Our proposal

5.21 We propose to continue with our new ex post, evaluative ESO incentives framework and expand on this to incorporate certain incentives that currently sit outside of this. Under this framework, we would retain the single 'pot' approach rather than creating multiple separate incentives. We will, however, consider the outcome of our separate consultation on the incentives arrangements in January. Should this process result in changes to the workings of the incentives scheme for the ESO we would expect to mirror these changes for the RIIO-2 price control. We also propose to retain the focus on financial incentives, recognising that some of these may have an additional reputational element. We consider these types of incentives are likely to be more effective in driving the behaviours we want to see in the ESO, while also allowing for a more holistic assessment of performance.

5.22 We do not, at this stage, propose a maximum size for the incentive reward or penalty that could be applied to the ESO. Our view of this will necessarily be influenced by the financial arrangements and level of return we allow for the ESO.

[28] Reckon, Consultancy report on future regulation and remuneration of the electricity system operator, July 2018 https://www.ofgem.gov.uk/publications-and-updates/consultancy-report-future-regulation-and-remuneration-electricity-system-operator

Should the incentive pot size be too large, this may make financing the ESO more difficult as the level of risk would be disproportionate given its relatively small asset base. We discuss some of these issues further in Chapter 7 – Finance. However, at this stage, we note our intention to use symmetric incentives wherever possible, to avoid creating any unnecessary distortions in the ESO's behaviour, unless we receive compelling evidence to the contrary.

5.23 We consider we could align Black Start incentives as part of the current incentives framework but believe these should remain as a standalone cost disallowance. In line with our decision following ESO separation, the mechanistic incentives on EDR and stakeholder engagement would be removed and will not apply to the ESO from April 2019 onwards.

6. Cost Assessment

This chapter summarises our proposed approach to assessing the costs of the ESO under the RIIO-2 price control. We propose to assess the costs of the ESO on an activity-by-activity basis, using a combination of different tools and processes.

ESO cost assessment questions

ESOQ8. Do you agree with our proposed approach to assessing the costs of the ESO under RIIO-2? Do you think we should assess costs on an activity-by-activity basis? How would you go about defining the activity categories? Are there alternative approaches we should consider?

ESOQ9. Do you consider the types of cost assessment activities we outline in this chapter are the right ones? Are there additional activities you think we should consider?

6.1 The ESO incurs various costs in performing its roles as system operator. It is essential that the internal costs incurred by the ESO are transparent and can be effectively scrutinised, to provide Ofgem and industry with confidence that its resources are appropriately targeted to deliver good outcomes for consumers.

6.2 In this chapter we set out the cost assessment arrangements we propose to put in place for the ESO under RIIO-2. We first define the outcomes we aim to deliver, summarise the current arrangements, discuss the options that we are considering and then set out our proposals for assessing ESO costs.

Outcomes we want to see

6.3 The ESO incurs a wide range of costs in performing its various roles and activities. Accurately predicting these costs is not always possible. Our aim is to introduce a holistic cost assessment framework that is transparent and comprehensive, and which does not distort the ESO's incentives to deliver value for money for consumers and the energy system.

6.4 For wider RIIO-2 sectors, we propose to incentivise companies to outperform their total expenditure allowances where we have confidence in our ability to determine baseline costs independently. Where we have high confidence, companies will have stronger incentives to beat allowances. As the ESO is a relatively idiosyncratic organisation, for which there is no single obvious benchmark, and for which costs may be difficult to baseline, our approach to assessing the costs and incentivising efficient spending is likely to be different from that of the other sectors.

The current arrangements

6.5 Under the RIIO-1 framework, the cost assessment of the ESO's internal costs was done as part of the wider RIIO-T1 price control. The ESO's operational and capital expenditures were assessed by Ofgem and a third party consultant and included in the costs for NGET. Under RIIO-2 we will build upon this process to suit the needs of the ESO as a separate entity that holds a unique position in the energy system

Options and issues to consider

6.6 There are a range of issues and options to consider when assessing the costs of the ESO. High-level, top-down approaches include comparing the costs of the ESO to other service delivery-focused companies in other sectors, or benchmarking against international companies. Detail-driven, bottom-up approaches include splitting the ESO's cost base into individual activities and building up to total costs.

6.7 In this section, we outline our thinking on the high-level options for assessing ESO costs, before outlining our thinking on more specific issues, including the role of business plans, benchmarking, stakeholder feedback, uncertainty mechanisms and third-party auditing.

High-level cost assessment approaches

6.8 We have considered a range of factors to identify the most appropriate methods for assessing ESO costs. These include: robustness of the process; transparency of the methodology; consistency with the regulatory framework; reasonableness and proportionality of the requirements; and adaptability. We have explored four high-level methods for the ESO cost assessment, which we have assessed against these criteria. These are outlined below.

- **Total expenditure (totex):** This approach would assess the sum of the capital and operational expenditure (capex and opex) incurred by the ESO. This approach represents a top-down approach to assigning a figure to expected costs, and would allow for a single return based on the totex number. This approach tends to be well-suited to companies for which there are robust historical costs and competitors or companies doing similar roles to benchmark against. It requires a single remuneration method for all activities, treating capex and opex largely in the same way. It can be a more difficult and less transparent way of determining the appropriate level of return for an entity responsible for delivering a wide variety of activities – if returns are intended to reflect levels of risk involved in different activities, then a totex assessment would necessarily produce a blended output. This would reduce our ability to apply potentially more efficient, activity-specific returns and could, if designed incorrectly, distort the ESO's incentives. For example, it could encourage the ESO to reduce spend in certain areas where investment would deliver better system outcomes.

- **Capex and opex:** This method splits the total expenditure of a company into the capital expenditure and the operational expenditure. As with the totex approach, this would produce relatively clear and simple outputs, with two cost categories/targets and the potential for two separate remuneration approaches. A drawback of this method is that, like with totex, a multitude of different activities and their associated costs and risk profiles are encompassed within a single remuneration method. As such, the potential issues of transparency and robustness arising from the totex approach could also apply to this option – though to a slightly lesser extent.

- **Departmental costs:** This would involve splitting the expenditure of the ESO into different functional departments. This could be on a totex or capex and opex basis. In splitting costs by department, the costs and risks are made more transparent, and different remuneration methods can be assigned to each individual department. This level of disaggregation in this approach would be flexible to accommodate any future changes in the functions or roles performed by the ESO. This would likely be more resource-intensive to establish than either of the first two options as a consequence of the additional layers of granularity of cost information that would be sought. There may be challenges in defining each 'department' – each one could perform a number of different roles that may overlap with those of others, with different risks applicable.

- **Activity-based costs:** This would involve allocating the expenditure of the ESO to specific activities. The ESO performs a number of different functions, such as operating the system in real time, acting as the delivery body for EMR and administering industry codes. This approach would assess the costs and risks associated with each individual activity. The activities could be clustered together where similar risks apply, and an appropriate remuneration approach or level of return could be assigned to each cluster. Similar to the previous option, it would likely be relatively resource intensive. However, it would provide significant transparency around the costs of each activity, which would provide Ofgem and industry with a clear view of where the ESO is targeting its resources. The level of disaggregation would also be flexible to accommodate any future changes in the functions or roles performed by the ESO.

6.9 We propose to undertake the cost assessment using the activity-based costs method with the costs split into capex and opex. This would increase the transparency of the ESO's expenditure and increase stakeholders' ability to effectively challenge the ESO's costs and priorities. Although this approach is likely to be more complex than some of the other options, we consider that any downside is outweighed by the potential efficiencies and enhanced transparency that could be achieved by assessing costs and remunerating the ESO on an activity-by-activity basis.

What might the activity categories this look like?

6.10 We have considered a number of different ways in which the different activities of the ESO could be categorised. This includes splitting the ESO's activities by their performance principles (these are covered in Chapter 3 – roles and principles), in order to align with the categories used as part of our assessment of the ESO's performance. However, we concluded that principles-based cost categories may not be workable, as there would likely be a significant degree of overlap in the activities and costs that fit within each principle.

6.11 As an alternative, the ESO suggested dividing its activities and services into eight categories.[29]

- Operate the system in real-time.
- Facilitate and run markets to balance the system.
- Manage costs of transmission network and optimise network planning and security.
- Administer and design charging and access arrangements.

[29] National Grid ESO, Exploring how the ESO could be funded in RIIO-2, October 2018

- Administer industry codes and facilitate market change to regulatory frameworks.
- Delivery body for EMR.
- Develop strategy and innovation.
- Produce future scenarios and outlooks.

6.12 We consider there may be merit in breaking these categorisations down further into specific activities with set deliverables. We intend to consider this further in our next phase of work – building on these categories, identifying the types of risk that apply to the ESO's various activities, and using this as the basis for further refinements to the cost assessment and remuneration approach.

Business plans

6.13 We propose to specify the information we need (separately from the information we already hold) to allow us to set an efficient price control. When submitting business plans, we expect the ESO to submit proportionate cost benefit analyses, clearly justify its proposed expenditure and demonstrate its consideration of both near- and long-term cost and benefits. As outlined in Chapter 4, it is essential that the ESO's business plans demonstrate strategic long-term thinking in terms of whole system approaches, innovation and consumer value. It is also essential that its plans take into account stakeholder views and reflect industry priorities. We intend to require the ESO to provide the processes and tools used to measure efficiency; external benchmarking evidence; evidence of market testing; and clear demonstration of the consideration of longer-term cost and output requirements.

Benchmarking

6.14 Benchmarking is the evaluation of costs against a standard. The ESO's total expenditure is a challenge to benchmark due to the lack of directly comparable entities. However, if ESO costs are broken down into individual activities, more benchmarks are available.

6.15 For activities such as running the system, we are likely to rely on international comparators. Although ESOs around the world are not all the same, certain aspects are similar enough to draw rudimentary comparisons. When looking abroad for comparators the wider context of the corresponding energy systems and environments must be taken into account.

6.16 Some activities performed by the ESO are similar to activities performed by other companies in the GB energy industry, other utilities, or in other sectors such as consultancy, IT services or the transport sector. For other activities the ESO may have a benchmark in the form of historical costs, where it has performed a similar activity before or performed an activity on an ongoing basis and has previous year's costs for comparison.

6.17 For all costs projected by the ESO we propose to require that, where possible, historical costs, appropriate benchmarks and proportionate cost benefit analysis are provided alongside the associated deliverables for reference.

Stakeholder assessment and review

6.18 We want to ensure that stakeholders can shape and influence the ESO's business plan. For the ESO RIIO-2 price control we expect to adopt a similar approach to that being used as part of the current 2018-21 ESO incentives scheme.

6.19 An important part of the current scheme is the necessity for the ESO to gather stakeholder views on the content and the level of ambition of its forward plan, and for stakeholder views to form a key part of evaluating the ESO's performance against that plan. We propose that a similar approach ought to be taken for the ESO's RIIO2 business plans. Low ambition or poor quality of the RIIO2 business plan could directly influence the ESO's incentives performance.

6.20 We expect the ESO to provide an opportunity for stakeholders to propose activities, deliverables and performance metrics that are set at stretching levels. The ESO should seek to build consensus around its plans, ensuring that its priorities align with industry expectations. In addition to the ESO's own engagement, we expect to continue to convene a Performance Panel[30] – this panel would provide an additional forum for scrutinising the ESO's plans, performance and costs at regular intervals.

6.21 Stakeholder views and evidence would form a key part of our cost assessment of the ESO. They would enhance our ability to effectively scrutinise the costs incurred by the ESO and determine whether it is delivering value for money.

Uncertainty mechanisms

6.22 Uncertainty mechanisms can be an appropriate way of accounting for costs that cannot be easily predicted in advance, and for events that happen that are out of the ESO's direct control, such as changes to legislation and code modifications.

6.23 As outlined in the following chapter, we propose that remuneration of the ESO be largely pass-through in nature – this would mean the ESO is able to access funding to deal with unexpected events without necessarily incurring penalties. Our ex post performance evaluation would then consider whether the costs incurred beyond the original business plan should have been anticipated ahead of time, and whether they were allocated efficiently.

6.24 To ensure the assumptions used as part of its business planning are transparent, we expect the ESO to outline in its business plans any areas where it considers there are future uncertainties that may have a significant bearing on its costs.

Third-party auditing

6.25 To supplement our assessment of the ESO's costs, third-party audit process could also be established. This would involve the ESO submitting its business plan to both the Authority and an independent, qualified third party. The third party would be tasked with reviewing the business plan and providing challenge and a view as to its efficiency. The audit results could then be submitted to the Performance Panel alongside the ESO's business plan. Additional audits of the actual costs incurred by the ESO could be conducted at a later stage. The use of a third-party audit would likely enhance the robustness of the cost assessment process. position is to include a full third party audit of the ESO business plan for this price control.

[30] Further detail on the Performance Panel's composition and purpose is set out in Chapter 4 – Price control process.

Our proposals

6.26 We propose to use a combination of the options considered above for our cost assessment of the ESO as part of RIIO-2. We propose to introduce requirements for the ESO to include the following in its business plan.

- Costs broken down by activity and with major deliverables assigned to activities.
- Historical costs and associated deliverables, where possible, for each activity.
- Comparable benchmarks for activities and deliverables, where relevant, to allow assessment of the relative efficiency of the proposal.
- Proportionate cost benefit analysis and justification for the proposed expenditure.
- Identification of uncertainties around deliverables, where applicable, with cost ranges for potential outcomes.
- Evidence of the ESO's assessment of the efficiency of the proposed activities and deliverables, eg external benchmarking or market testing.
- Clear demonstration of the ESO's consideration of longer-term costs and benefits.

6.27 In the development of the business plan we expect the ESO to closely consult with stakeholders, and as a result:

- propose activities, deliverables and performance metrics that are set at stretching levels
- build stakeholder consensus around activities, deliverables and performance metrics, and seek to ensure that its priorities are developed in light of those of stakeholders
- demonstrate long-term thinking in terms of whole system approaches, innovation and consumer value.

6.28 We also propose to introduce requirements for a third-party audit of the ESO's costs. We will consider whether this should be on the projected costs in the business plans, and/or an ex-post audit of the actual costs incurred by the ESO.

7. Finance

This chapter outlines our proposals for financing the ESO under the RIIO-2 price control. We propose to adopt a remuneration model for the ESO that is based around the pass-through of actual costs, with a margin assigned based on business plan allowances. This margin could vary by activity.

ESO Finance questions

ESOQ10. Do you agree with our proposed remuneration model for the ESO under RIIO-2? Do you think it provides the right incentives for the ESO to deliver value for money for consumers and the energy system? Are there other models you think are better suited?

ESOQ11. Are there any risks associated with our proposed remuneration model that you do not think have been effectively captured and addressed? Do you think that we should put in place any of the mechanisms intended to provide additional security to the ESO outlined in this chapter – eg parent company guarantee, insurance premium, industry escrow or capital facility?

ESOQ12. Do you agree with our proposal relating to remove the cost sharing factor? Can you foresee any unintended consequences in doing so, and how could these be mitigated?

ESOQ13. Do you agree with our proposal to introduce a cost disallowance mechanism for demonstrably inefficient costs? What criteria should we apply in considering what constitutes 'demonstrably inefficient'?

7.1 In order for the ESO to fulfil its role efficiently and effectively, it is important to put in place a remuneration framework that supports investment and allows for fair returns, while also keeping costs that will ultimately be borne by consumers to a minimum. Finance in this section refers to the remuneration of the ESO.

7.2 In this chapter we set out the financial arrangements we propose to put in place for the ESO under RIIO-2. We first define the outcomes we aim to deliver, then summarise the current arrangements, discuss the options that we are considering and set out our proposed way forward.

Outcomes we want to see

7.3 The ESO performs a crucial role within the energy system. While relatively small in terms of its internal costs, it manages and has the ability to influence much greater sums of industry cost. As such, the ESO can, by investing in the right systems and processes, help to reduce overall industry costs. We want to implement a price control regime that supports effective investment, allocates risk efficiently, and ensures fair returns for the services that the ESO provides.

7.4 For wider RIIO-2 sectors, we propose to use a remuneration model based on the Regulatory Asset Value (RAV).[31] The ESO, unlike other sectors, is relatively asset-light. Therefore, a RAV-based remuneration model may not be appropriate or necessarily deliver the most efficient outcomes. As a result, our model is likely to

[31] Further detail on the proposed financial arrangements for other RIIO sectors is included in the RIIO-2 Finance Annex published alongside the Core Document.

differ from that of other sectors. It should reflect the unique role of the ESO within the energy system and incentivise it to deliver value for money, as opposed to always focusing on minimising its internal costs.

The current arrangements

7.5 Under the current price control, funding for the ESO's internal costs is determined as part of the overall NGET price control. As such, it is based on the same remuneration system as the rest of NGET. This system is based on a RAV*Weighted Average Cost of Capital (WACC) remuneration method.

7.6 The RAV is the value ascribed by Ofgem to the capital employed in the licensee's regulated business. It is calculated by summing an estimate of the initial market value of each licensee's regulated asset base at privatisation and all subsequent allowed additions to it at historical cost, and deducting annual depreciation amounts calculated in accordance with established regulatory methods. The RAV is currently indexed to RPI in order to account for the effects of inflation on the licensee's capital stock.[32] This value is multiplied by the WACC, which is the weighted average of the cost of debt and the cost of equity – the weighting is determined by the ratio of debt to equity (the 'gearing ratio'). This represents the cost to a company of raising the funds for its activities (specifically, its capex programme). As part of the price control process, Ofgem sets an allowance for the expected WACC that regulated companies pay.

7.7 This RAV*WACC approach works suitably well for an asset heavy business. However, it may not be as suitable for an asset-light organisation whose costs are largely opex. Should we continue to treat the ESO in the same manner as the asset-heavy network companies, there is the possibility that we miss out on efficiencies that could be captured using an alternative remuneration approach.

Options and issues to consider

7.8 In this section we consider some of the potential options for remunerating the ESO. We also outline our thinking in relation to other issues such as cost disallowance, sharing factors, allowed returns and approach to accounting for risk.

Methods of remuneration

7.9 As set out in the Cost Assessment in the core document, we are proposing to assess the ESO's internal costs on an activity-by-activity basis. This approach would enable us to utilise a different method of remuneration for different activities. We have considered a number of methods for remunerating the ESO for the service it provides. We have narrowed the appropriate options into six categories that we explore below.

- RAV*WACC: This is the method used in the RIIO-1 price control framework for the ESO's internal costs, described above. This method has a proven track record for asset-heavy organisations. However, this approach may not be as well-suited to asset-light businesses. The ESO has a relatively small asset base which would mean that to cover its costs the WACC would have to be much higher than for an asset-heavy business. Such a high WACC could skew the incentives of the ESO, encouraging them to prioritise increasing their RAV

[32] For other sectors it is proposed to change RAV indexation in RIIO-2 from RPI to CPIH (see Chapter 6 of the Finance Annex for more detail).

through capital expenditure, potentially at the expense of more efficient operational expenditure.

- Annual budgets: This approach would require the ESO to submit a business plan setting out the costs that it expects to face in carrying out its activities and functions. This plan would then be assessed and challenged by industry and Ofgem. Upon sign-off of the plan the budget would be set and the ESO would have the budgeted amount to fulfil its activities and functions. Any underspend or overspend against that target would be dealt with through a sharing factor arrangement. Under this approach profit would only be realised if the ESO were to be more efficient than its budget.
- Annual budgets with margin: This approach is similar to the previous option. The addition of a margin allows for a profit to be made through business as usual activities, in addition to cost efficiencies. Under this type of approach, we would expect to use a sharing factor to deal with underspend or overspend against this budget.
- Cost pass-through: Under a cost pass-through arrangement, the actual costs incurred by the ESO for the activity would be passed straight through to consumers. No sharing factor would be applied, though there is the potential to place downward pressure on costs through an incentive scheme.
- Cost pass-through with margin: This approach is similar to the previous option, with the addition of a margin to the forecast costs or revenues set out in the business plan to allow the ESO to make a profit for provision of the service. Any underspend or overspend against the costs in the business plan could be taken into account through a performance evaluation as part of the incentive scheme.
- Cost pass-through with service charge: This approach is very similar to the previous option, but instead of a margin on the expected costs or revenues, a flat fee is agreed in advance. Any underspend or overspend against the costs in the business plan could be taken into account through a performance evaluation as part of the incentive scheme.

7.10 We propose to utilise a cost pass-through with a margin approach for all of the activities performed by the ESO, with the option for different margins for certain activities. We explore how these margins could be derived in the Allowed Margins section of this chapter.

7.11 The major benefit of using a cost pass-through approach is that it would significantly reduce any incentive for the ESO to hold back spending that could deliver further consumer value. There is a risk with this approach that ESO spending increases significantly – we consider that the performance evaluation (including the role of the Performance Panel) and application of the incentives arrangements can help to counteract the potential for inefficient spending by the ESO. This should help to ensure that the ESO delivers value for money for consumers – spending where doing so can deliver improvements in the energy system, while continually seeking cost efficiencies.

Cost disallowance and cost trigger

7.12 Using a cost pass-through with margin remuneration approach increases the importance of our ability to effectively scrutinise the ESO's expenditure to prevent the ESO from overspending. An up-front assessment of the ESO's proposed costs in its business plans, combined with an ex-post evaluation of its performance and actual spend, would act as the primary drivers for the ESO to spend efficiently. However, we consider that where costs are deemed to be demonstrably inefficient there should be a process to recoup these costs. This could take the form of a cost disallowance mechanism. This process would allow for ESO costs to be reviewed and challenged to determine whether they were appropriately and efficiently incurred. Where costs are considered demonstrably inefficient, a portion of those costs would be disallowed and recovered from the ESO. We would need to carefully consider the interactions between a cost disallowance mechanism and the incentives arrangements, to ensure they work together appropriately.

7.13 In addition, to increase transparency and predictability around the ESO's costs, we could introduce a mechanism requiring the ESO to notify relevant parties where the actual costs significantly deviate from the business plan. This 'cost trigger' mechanism could take the form of a letter to Ofgem (and possibly the Performance Panel), which is provided once a certain spend threshold for an activity has been reached, and which sets out the reason for the deviation and revised cost estimates.

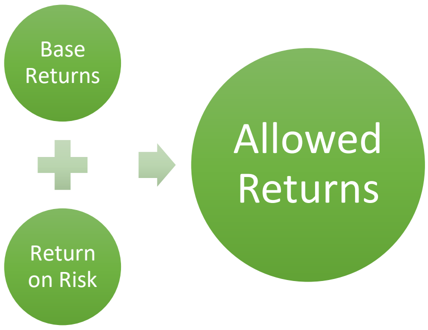
Sharing factors

7.14 Sharing factors can help to reduce the potential for windfall gains and losses on the part of regulated companies. Sharing factors, as used in the NGET RIIO-T1 price control, place an incentive on the ESO to ensure that costs are as low as possible when compared to agreed allowances, as a proportion of any underspend would become profit for the ESO.

7.15 We consider, however, that the use of a sharing factor approach in conjunction with our evaluative incentives framework does not form a coherent set of behavioural drivers for the ESO. The focus of the ESO should be primarily on delivering the best overall outcomes (and value) for the energy system and consumers. A sharing factor may encourage the ESO to focus primarily on reducing costs, potentially missing out on opportunities to deliver improvements that would be in the interests of consumers and the system as a whole. Other mechanisms – through the incentives framework for instance – could help to ensure the ESO continuously seeks to be efficient in the costs it incurs, without distorting its incentives to invest.

Allowed return and incentives

7.16 In adopting a remuneration model based on cost pass-through with a margin, categorised by activity, it is possible to assign a measure of risk to each activity. A base margin could be set that accounts for the minimum level of risk that applies to all aspects and activities of the ESO. Then, for any given activity where the ESO faces a higher risk than the accepted baseline, it would receive an additional margin. A different value could be applied for each activity, including zero, based on the level and type of risk that applies. We do not propose specific values for these margins at this stage, but we refer to these two types of return as 'base return' and 'return on risk'.

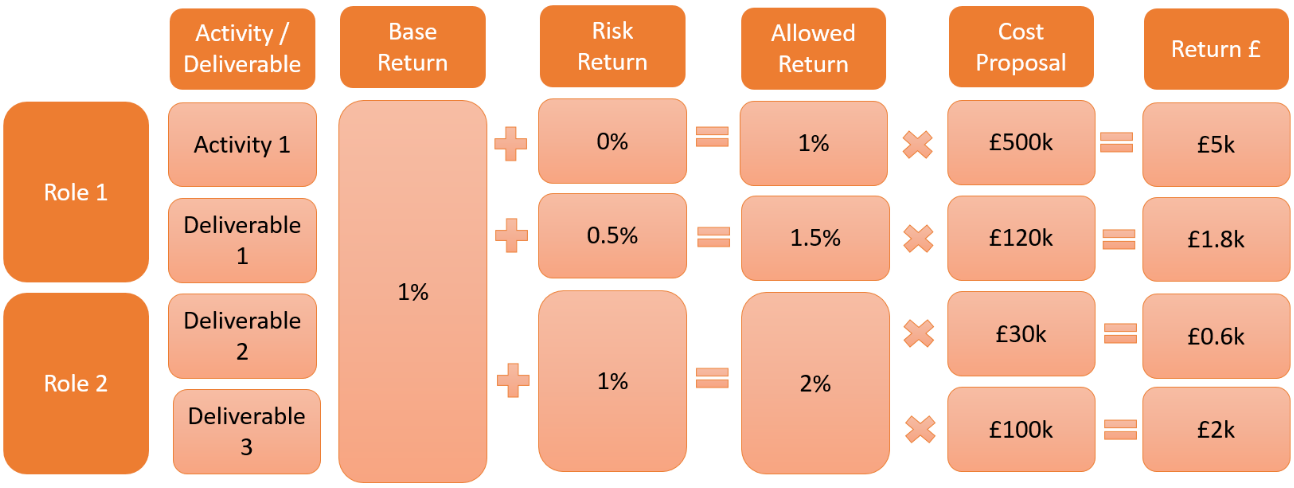


7.17 The 'base return' and the 'return on risk' would be summed to provide the allowed returns for a given risk-based activity group. We expect to use activity-based benchmarking, including analysis of historical costs, international and other sectoral comparators to determine the appropriate level of return.

7.18 To make this process as streamlined as possible we propose that where activities are subject to the same risks we intend to use the same 'return on risk'. The allowed return would be determined based on the agreed business plan costs, rather than actual costs incurred. This would ensure that the ESO is not incentivised to increase costs in order to increase its return. This does, however, increase the importance of having an effective cost assessment process.

7.19 Figure 6 below shows an illustrative example of how this might work in practice. The numbers used should be considered as examples only.

Figure 6: Allowed returns



Risk

7.20 The ESO assumes a number of different risks in undertaking its various roles. Through the design of the price control, we aim to minimise these risks – this should help to keep the ESO's financing costs to a minimum. However, some level of risk will continue to apply. For instance, the inclusion of a cost disallowance approach, the potential for downside penalties to be applied through the incentives scheme, and its revenue collection activities, could create significant gaps in ESO funding. There are a number of options to provide additional security should the ESO not be able to cover its costs. These include:

- Parent company guarantee: National Grid Plc would provide a guarantee to cover the costs of the ESO in the event that it can no longer cover these itself. National Grid Plc would be remunerated for the provision of this guarantee as an ongoing operating cost for the ESO.
- Insurance premium: The ESO would obtain insurance cover for the eventuality that it can no longer cover its costs. The cost of this premium would be treated as an operating cost for the ESO.
- Industry escrow: Industry put up collateral to cover the risk of the ESO not being able to cover its costs. This option would likely mean no ongoing costs to the ESO, but would require industry to post the collateral up front.
- Financial/capital facility: The ESO would seek a facility to provide it with temporary financial cover that it would have to pay off in later years. This facility could work like an overdraft or line of credit. The cost of this facility would be treated as an operating cost for the ESO.

7.21 We do not propose which, if any, of these options we intend to pursue at this stage. We are interested in initial stakeholder views on these questions. Following this consultation, we plan to investigate each of these options to understand their costs and benefits and determine which option most efficiently manages the ESO's risk.

Wider Financeability Questions

7.22 We are still considering a number of issues around financeability that are not covered in this chapter. For issues such as cost of debt, financeability, corporation tax and pensions we intend to carefully review feedback in response to the proposals set out in the Core Document and Finance Annex, and consider whether we should depart from this approach in the case of the ESO. Assuring the proposals, once the cost and margin arrangements are finalised, will be undertaken after receipt of the ESO's draft RIIO-2 business plan[33]. The assessment will be in line with wider RIIO-2 proposals in relation to financeability, to be adjusted for the ESO's specific circumstances where appropriate.

Our proposals

7.23 We propose to remunerate the ESO using cost pass-through with a margin. This margin would comprise a base level of return and a return on risk (which could be zero), to be determined on an activity-by-activity basis. We do not propose to apply a sharing factor to any underspend or overspend against the agreed allowances. However, to ensure that consumers are protected from any demonstrably inefficient spending on the part of the ESO, we propose to introduce a cost disallowance mechanism to enable us to recoup such spending. In addition, to provide additional transparency around the ESO's spending, we propose to introduce a cost trigger mechanism, whereby the ESO would notify Ofgem (and possibly the Performance Panel) when spending exceeds a certain proportion of agreed allowances for a given activity.

7.24 We consider that these arrangements would help to ensure that the ESO invests where doing so can deliver benefits to consumers and the energy system, while also seeking to be efficient in its costs. The performance evaluation (including the

[33] Further details are set out in the Finance Annex also published today.

role of the Performance Panel) and application of the incentives arrangements would play a key role in maintaining downward pressure on the ESO's costs.

8. Innovation

This chapter summarises our proposal to broadly adopt a similar innovation stimulus package for the ESO as for other RIIO-2 sectors. It also signals our intention to look in detail at ESO-specific issues, such as the funding mechanism for ESO innovation funds.

ESO innovation questions

ESOQ14. Do you agree with our proposals to retain an innovation stimulus for the ESO, but tailor aspects of this innovation stimulus to take account of the nature of the ESO business?

ESOQ15. What ESO-specific issues should we consider in the design of the ESO innovation stimulus package

8.1 Network innovation mainly comprises research, development and demonstration projects. Network companies undertake such projects to trial new technologies that address issues of strategic importance to the GB transition to a low carbon economy and deliver wider environmental benefits to customers.

8.2 Historically, these projects would not otherwise be funded as part of network companies' business as usual activities because of the lack of commercial incentive. The monopoly network companies do not experience the same strength of incentive to innovate as unregulated companies operating within a competitive market. This, and the concern that network companies seek short term solutions at the cost of long-term investment due to the length of a price control, is the rationale behind dedicated innovation funding.

8.3 In this chapter, we consider the innovation funding mechanisms that should apply to the ESO under RIIO-2. We first set out the overall outcomes we want to deliver and outline the current arrangements, before exploring options for change and setting out our proposal.

Outcomes we want to see

8.4 As the ESO will have a key role within the energy system transition, we want it to be innovative. The ESO should take forward its own innovation projects and participate in those led by other network companies. We therefore want to ensure that there are mechanisms in place as part of the ESO price control to fund innovation projects that could provide value for consumers and the energy system, but which would not otherwise be funded as part of business as usual.

8.5 As set out in the RIIO-2 Sector Specific Methodology Core Document, we have previously decided to retain an innovation stimulus package. However, we are proposing certain reforms to the existing arrangements. Our aim for RIIO-2 is to encourage network companies to innovate as part of their business as usual activities using their baseline allowance. We aim to increase the coordination of network innovation funding with other public sector funding. Where we provide innovation funding we expect this to be increasingly focused on energy system transition challenges, and for there to be greater third party engagement in innovation projects.

The current arrangements

8.6 Within the RIIO-1 price control, all network companies were incentivised to innovate via core price control incentives and an innovation stimulus package comprising the Network Innovation Allowance (NIA), the Network Innovation Competition (NIC) and the Innovation Roll-Out Mechanism (IRM). The ESO is eligible for NIA, NIC and IRM innovation funding as part of NGET's price control.[34] Further detail about the ESO's RIIO-1 innovation stimulus is set out below.

Network Innovation Allowance

8.7 At the start of RIIO-1, NGET (including the ESO) was awarded 0.7% of its allowed revenue for NIA innovation funding ('NIA percentage') based upon the quality of its Innovation Strategy. This equates to over £10m of NIA funding to NGET each year during the RIIO-1 price control. To date in RIIO-1, NGET has led over 200 NIA projects.

8.8 As part of the its legal separation from NGET, we confirmed that innovation stimulus funding should still be provided to the ESO. We decided to assign 0.2% of the NIA percentage to the ESO, with the remaining 0.5% sitting with the transmission operator. As a result of this assignment, the ESO is set to receive around £3m of NIA funding each year during the remainder of RIIO-1. After separation in April 2019, the ESO will likely still be required to adhere to the same requirements as other network companies – for example, 75% of its NIA funding must still be spent externally.

Network Innovation Competition

8.9 NGET has also actively competed for NIC funding during the course of RIIO-1. Its involvement in several NIC projects is detailed in the National Grid ESO Innovation Strategy published in March 2018.[35] We also recently published a decision to award the ESO's Black Start from Distributed Energy Resources project £10.27m funding in the 2018 electricity NIC competition.[36]

Options and issues to consider

8.10 Within the RIIO-2 Sector Specific Methodology – Core Document, we have proposed a number of reforms to the existing RIIO innovation arrangements. In summary, they include new measures to drive innovation as business as usual, including removing the IRM; introducing a new funding pot to focus on strategic challenges, in place of the NIC; and consulting on the case for retaining the NIA.

8.11 The design and operation of the RIIO-2 innovation stimulus for other network companies may not be fully applicable for the ESO. The ESO is very different from the other network companies. It is comparatively asset light, and its innovation projects are generally lower value as they do not involve physical assets, but are instead focused around system operability and use of data. It also has relatively small internal costs and operates on a GB-wide basis, rather than regionally.

[34] Note that as the NG ESO was part of the NG TO price control, it is not possible to fully distinguish between innovation projects undertaken by NG ESO and the NG ET within the RIIO-1 price control up to the date of ESO separation.
[35] For more information, see here https://www.nationalgrid.com/uk/investment-and-innovation/innovation/system-operator-innovation/so-innovation-strategy
[36] Ofgem, Network Innovation Competition 2018 Funding Decisions, 29 November 2018

There are a number of other ESO-specific issues that need to be taken into account in designing any ESO innovation stimulus, which are set out below.

8.12 **Conflict/double reward between innovation stimulus and ESO incentives framework:** As set out in chapter 5 – Outputs and Incentives, we are proposing an incentives regime for the ESO that builds on the current ex post, evaluative regime. There is a risk with any incentives scheme that the ESO may be doubly rewarded via the ESO incentives framework for outcomes of projects that are funded via the innovation stimulus. We need to ensure that we have arrangements that appropriately reward innovation projects, while taking into account the source of the funding for these.

8.13 **Source of ESO innovation funds:** There may, in future, be an inconsistency between the recovery of the ESO's wider funding and the recovery of its innovation funds. From the start of RIIO-2, we expect the ESO's internal costs to be recovered from Balancing Services Use of System (BSUoS) charges. However, RIIO-1 electricity NIC funds are currently recovered via Transmission Network Use of System (TNUoS) charges, which cover the cost of installing and maintaining the transmission network. As many of the ESO's innovation projects relate to system balancing, we are considering whether its innovation funding should be recovered from BSUoS charges in future.

8.14 **Additional issues to consider if we decide to retain the NIA in RIIO-2**: We are consulting on the case for retaining the NIA in the RIIO-2 Sector Specific Methodology Core Document. If we decide to retain the NIA in RIIO-2, there may be some ESO-specific design questions that will need to be considered in more detail. This includes, for example, the size of the ESO's innovation allowance and the applicability of requirements to spend 75% of NIA funds externally. We will explore these issues in more detail after any decision is made to retain the NIA.

Options:

8.15 As this is the first separate ESO price control, we have considered whether we should retain an innovation stimulus for the ESO.

Option 1: Provide no innovation stimulus for the ESO

8.16 This would mean that the ESO would not have access to an additional funding on top of its agreed revenue to fund innovation projects. It would still be encouraged to fund innovation activities either as business as usual activities, using its agreed allowance, or via collaboration with other network companies.

8.17 This option is considered undesirable. We consider, as set out in our RIIO-2 Framework Decision document published in July 2018, that there is still a need for an innovation stimulus for the ESO. The ESO has an important role to play in network innovation and enabling the energy system transition. Removal of an innovation stimulus for the ESO could limit its involvement in network innovation (due to the risk of how these costs would be considered in the ESO's performance evaluation), could create the perception that innovation is less important for the ESO, and could create barriers for its involvement in other network companies' projects.

Option 2: Fully align the ESO's innovation stimulus with the wider RIIO-approach for other network companies

8.18 A second option is to provide innovation stimulus funds to the ESO and fully align the design and operation of these innovation funds with those of other network companies. This would rule out any tailoring of the ESO's innovation stimulus to account for the differing nature of its business, and innovation funds would continue to be recovered from TNUoS.

8.19 This option is also considered undesirable. There may be certain benefits to adopting the same approach to innovation funding for all network companies, for example in terms of the overall simplicity of the price control. However, the ESO is very different from the other network companies – applying the same arrangements to the ESO as to the other companies may reduce its ability to lead and get involved in innovation projects. For instance, as its internal costs are relatively small compared with other network companies, assigning innovation funds based on a consistent percentage of allowed revenues may unduly limit the types of projects that it can participate in.

Option 3: Broadly align with wider RIIO-2 approach but tailor some aspects for ESO

8.20 The third option is to provide the ESO with access to innovation stimulus funds, and broadly align with the design of innovation stimulus for wider network companies, while tailoring some specific aspects to address specific ESO innovation issues.

8.21 This could enable the ESO's innovation stimulus to be tailored to take into account some of the issues identified above. For example, we could look to recover the ESO's innovation funds from BSUoS rather TNUoS, and consider whether it is appropriate to adapt the proportion of innovation funds that must be spent externally. This is our preferred option.

Our proposals

8.22 In light of the key role the ESO has within the energy system transition, we consider it desirable to continue to incentivise the ESO to innovate and provide the ESO with additional funds to undertake innovative projects. We therefore propose to provide the ESO with access to innovation stimulus funds and broadly align with the design and operation of innovation stimulus for wider network companies.

8.23 We propose to tailor specific aspects of the ESO innovation stimulus to address some of the ESO-specific issues that arise due to differences between it and other network companies. We propose to do further work as part of the detailed design of the operation of the RIIO-2 innovation stimulus and development of ESO price control to consider these issues, in light of consultation responses to the issues raised in the Core Document.

Appendices

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Appendix 1 - Further detail on principles based regulation

> "In general terms, PBR means moving away from reliance on detailed, prescriptive rules and relying more on high-level, broadly stated rules or Principles to set the standards by which regulated firms must conduct business." – Julia Black

The ESO Roles and Principles are based on the regulatory concept called principles-based regulation (PBR). This term is used to define rules that govern behaviour and conduct – as opposed to a prescriptive approach to regulation, which is characterised by many specific rules defining outputs and/or the process. PBR places the onus on regulated companies to follow the spirit, as much as the letter, of our rules.

Higher-level obligations for the ESO based on the objectives we expect it to deliver should help ensure that it has sufficient flexibility to determine how to deliver these objectives in an evolving market place. This should make the ESO better able to react quickly to new challenges. For the ESO to prosper under a principles-based approach it would require a mind-set shift – it would need to be more proactive and take ownership of its objectives. The ESO would also be expected to engage with industry about how it should undertake its role.

In some areas, there will still be a need for more detailed licence obligations. We think this is more likely to be the case where the ESO has a specific role or set of requirements to perform.

Further detail on the envisaged application of the ESO principles is set out in our consultation on the new ESO regulatory and incentives framework.[37]

[37] Ofgem, Future arrangements for the electricity System Operator: the regulatory and incentives framework, February 2017

Appendix 2 - Summary of the ESO's current roles and principles, and our expectations around them

In the table below, we briefly summarise the principles that currently apply to the ESO, and our expectations of what they mean in practice. We set out our thinking in greater detail in the guidance we have published on the ESO's roles and principles.[38] As noted in Chapter 3, we intend to consult on changes to the ESO regulatory and incentives framework to reflect lessons learned from its operation to date early next year.

Principle	Expectations
Principle 1: Support market participants to make informed decisions by providing user-friendly, comprehensive and accurate information.	Publish information to help market participants balance their own positions Ensure information is user-friendly, comprehensive and accurate
Principle 2: Drive overall efficiency and transparency in balancing, taking into account impacts of ESO actions across time horizons.	Think across time horizons and take a strategic approach to drive overall efficiency (ST vs LT trade off) Transparent decision framework for deriving its optimal procurement strategy
Principle 3: Ensure the rules and processes for procuring balancing services maximise competition where possible and are simple, fair and transparent.	Procure ancillary services competitively Rationalise product offering Limit, wherever possible, exclusivity requirements and update technical requirements Communicate expected procurement needs to the market and justify procurement decisions
Principle 4: Promote competition in the wholesale and capacity markets.	Encourage and actively drive forward competitive solutions and approaches Engage with industry to understand the nature of the challenges/distortions to competition in code arrangements Propose and support pro-competitive modifications
Principle 5: Coordinate across system boundaries to deliver efficient network planning and development	Collaborate, communicate and coordinate with other network operators to identify and support the delivery of the most efficient network planning and development solutions for the whole system Present a coordinated view of whole system's network development needs Work with other network operators to optimise outages and deliver efficient constraint management processes Consider how procuring solutions from one and other could lead to minimising costs
Principle 6: Coordinate effectively to ensure efficient whole system operation and optimal use of resources	Take a whole system perspective in operating the transmission network Develop processes with other network operators that ensure optimal resource utilisation across the network
Principle 7: Facilitate timely, efficient and competitive network investments	Use the Network Options Assessment (NOA) to identify long-term electricity system needs Demonstrate that it has undertaken a thorough assessment of possible options

[38] Ofgem, ESO roles and principles: Guidance document, February 2018 ESO roles and principles: Guidance document

Appendix 3 – ESO consultation questions

ESO roles and principles questions

ESOQ1. Do you agree with our proposal to maintain the current roles and principles framework for RIIO-2?

ESOQ2. Do you agree with our proposals to keep the ESO's code administration, EMR delivery body, data administration, and revenue collection functions in place for RIIO-2? Do you believe that any of these functions (or any other functions) should be opened up to competition, either now or in future?

ESOQ3. Do you consider the ESO is best-placed to run early and late competitions?

Price control process questions

ESOQ4. Do you agree with our proposal to move to a two-year business planning cycled price control process for the ESO? If not, please outline your preferred alternative, noting any key features (eg uncertainty mechanisms or re-openers) that should be included.

ESOQ5. What stakeholder engagement mechanisms should be put in place for the ESO's business planning and ongoing scrutiny of its performance? Do you agree with our proposal to maintain, and build upon, the role of the Performance Panel?

ESO output and incentives questions

ESOQ6. Do you agree with our proposed approach of using evaluative, ex-ante incentives arrangements for the ESO?

ESOQ7. Do you agree that we should continue to apply a single 'pot' of incentives to the ESO, and that this should be a symmetrical positive/negative amount? If not, why not?

ESO cost assessment questions

ESOQ8. Do you agree with our proposed approach to assessing the costs of the ESO under RIIO-2? Do you think we should assess costs on an activity-by-activity basis? How would you go about defining the activity categories? Are there alternative approaches we should consider?

ESOQ9. Do you consider the types of cost assessment activities we outline in this chapter are the right ones? Are there additional activities you think we should consider?

ESO Finance questions

ESOQ10. Do you agree with our proposed remuneration model for the ESO under RIIO-2? Do you think it provides the right incentives for the ESO to deliver value for money for consumers and the energy system? Are there other models you think are better suited?

ESOQ11. Are there any risks associated with our proposed remuneration model that you do not think have been effectively captured and addressed? Do you think that we should put in place any of the mechanisms intended to provide additional security to the ESO outlined in this chapter – eg parent company guarantee, insurance premium, industry escrow or capital facility?

ESOQ12. Do you agree with our proposal relating to remove the cost sharing factor? Can you foresee any unintended consequences in doing so, and how could these be mitigated?

ESOQ13. Do you agree with our proposal to introduce a cost disallowance mechanism for demonstrably inefficient costs? What criteria should we apply in considering what constitutes 'demonstrably inefficient'?

ESO innovation questions

ESOQ14. Do you agree with our proposals to retain an innovation stimulus for the ESO, but tailor aspects of this innovation stimulus to take account of the nature of the ESO business?

ESOQ15. What ESO-specific issues should we consider in the design of the ESO innovation stimulus package