Consultation

RIIO-3 Sector Specific Methodology Consultation – ET Annex

Publication date:	13 December 2023
Response deadline:	6 March 2024
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We are consulting on the methodologies we will apply for the electricity and gas transmission and gas distribution sectors in the RIIO-3 price control, which will run from 1 April 2026. We would welcome views from all stakeholders with an interest in the regulation of the energy networks. We particularly welcome responses from groups representing consumers of gas and electricity. We would also welcome responses from other stakeholders and the public.

This document outlines the scope, purpose and questions of the consultation and how you can get involved. Once the consultation is closed, we will consider all responses. We want to be transparent in our consultations. We will publish the non-confidential responses we receive alongside a decision on next steps on our website at ofgem.gov.uk/consultations.

If you want your response – in whole or in part – to be considered confidential, please tell us in your response and explain why. Please clearly mark the parts of your response that you consider to be confidential, and if possible, put the confidential material in separate appendices to your response.

Any enquiries related to the text of this publication should be sent to Ofgem at:

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Contents

1. Introduction

Structure of this document and associated documents

1.1 In October 2023, we published our decision on frameworks for future systems and network regulation (FSNR),[1] which set out our proposed approach to the RIIO-3 price controls and highlighted the main areas of proposed change from the current RIIO-2 price controls (this is referred to as our 'Framework Decision').

1.2 This consultation comprises the RIIO-3 Sector Specific Methodology (Overview Document), the Regulatory Finance annex (Finance Annex), and sector specific annex documents for gas distribution (GD), gas transmission (GT) and electricity transmission (ET). The sector specific documents are intended to be read alongside the Overview Document and Finance Annex.

1.3 The Overview Document provides detail on how we propose to apply the Framework Decision to areas that are relevant across the sectors. The proposals in the Overview Document apply across the GD, GT and ET networks.

1.4 This document is focused on the application of the RIIO-3 framework, established through our Framework Decision, to ET specific issues. It sets out our sector specific views on the aspects of the RIIO-3 price control that electricity transmission network companies need to understand to be able to put together their Business Plans.

What is electricity transmission?

1.5 Great Britain's (GB) electricity transmission network transmits high-voltage electricity from where it is produced to where it is needed throughout GB.

1.6 Transmission assets consist of high-voltage electricity wires which extend across GB and nearby offshore waters, transporting electricity between power stations, interconnectors with external systems, larger users and interfaces with distribution networks. Three Transmission Owners (TOs) own, maintain and develop a high-voltage system within their own distinct transmission areas across GB. These are National Grid Electricity Transmission plc (NGET) for England and Wales, Scottish Power Transmission Limited (SPT) for southern Scotland and Scottish Hydro Electric Transmission plc (SHET) for northern Scotland and the Scottish islands.

[1] https://www.ofgem.gov.uk/publications/decision-frameworks-future-systems-and-network-regulation

1.7 The transmission system is operated by the Electricity System Operator (ESO). The ESO is responsible for ensuring the stable and secure operation of the whole transmission system, from the day-to-day operation of the system, through to managing the commercial terms of connecting to and using the network and longer-term network planning. Work is ongoing to transition the ESO to the Future System Operator (FSO) as an expert, impartial body with an important duty to facilitate net zero whilst also maintaining a resilient, and affordable system. The FSO will be operational in advance of the start of RIIO-ET3.

Challenges for RIIO-ET3

1.8 RIIO-ET2 (2021-2026) has continued the progress made during RIIO-ET1 (2013-2021) in delivering improvements in TOs' performance, including in relation to the quality of service provided to network users and the progressive build-out of the network.

1.9 However, a historical lack of network investment by the TOs has left them with catching up to do to connect the high volumes of low-carbon generation and technologies that will facilitate the net zero transition. For example, annual constraint costs on the network rose from £293m in 2014/15 to £1.78bn in 2022/23 as a result of needing to constrain generation (largely renewables) due to congestion on the electricity networks caused by investment in grid capacity failing to keep up with the pace of renewables deployment.

1.10 As a result, significant new investment will be needed during RIIO-ET3, likely running into the tens of billions of pounds. Enabling companies to better anticipate demand to deliver new and upgraded electricity networks in the right place, at the right time and efficiently, while protecting the interests of existing and future consumers, will be the major challenge for RIIO-ET3. To ensure that this investment is delivered, we propose to introduce stronger incentives around timely delivery of clearly defined outputs in RIIO-ET3.

1.11 Planning this vast investment in new ET infrastructure strategically will be critical to ensuring consumer value for money. The Strategic Spatial Energy Plan (SSEP), Centralised Strategic Network Plan (CSNP) and Regional Energy Strategic Planners (RESP), all of which are currently in development and will be implemented from 2025 onwards, will be key to achieving this. We will then ensure that RIIO-ET3 is sufficiently agile to fund those plans in a manner which avoids regulatory approval being on the critical path for projects and can attract significant investment into the sector at the required pace.

1.12 RIIO-ET2 has made good progress in this regard. To meet the challenge of accelerating onshore electricity transmission and meet the government's ambition to connect 50GW of offshore wind generation by 2030, we introduced a new approval and funding framework in 2022 known as Accelerated Strategic Transmission Investments (ASTI).[2] It was designed specifically to meet recommendations from the ESO's Holistic Network Design (HND)[3] for offshore wind and saw us approve in the region of £20bn of new, strategically planned, transmission investment. RIIO-ET3 will look to build on the progressive principles of ASTI and incorporate a similar regime into the enduring price control framework.

1.13 This will be complemented by a regulatory finance regime that seeks to provide confidence to investors to continue to invest in the sector, ensuring the required level of capital can be injected efficiently to keep costs low for consumers. The interplay between the regulatory finance regime and the wider outputs and incentive regime means that we will need to give careful consideration to the risk/reward proposition for RIIO-ET3 - as well as under the adjacent ASTI regime - and the allocation of risk between consumers and investors. We see this as key for delivering best value for money for consumers.

1.14 November's Connections Action Plan (CAP)[4] sets out specific reforms related to how we and government intend to work with industry to reduce the length of the connections queue. This work will require careful coordination with network investment during RIIO-ET3 to ensure that the reforms are cognisant of a growing network, and that network investment plans are cognisant of changing customer behaviour because of the reforms.

1.15 We do not want this new network investment to come at the expense of network reliability or to have a detrimental impact on the environment. As such we will continue to drive the TOs to deliver a quality service in the way that they serve their customers, the way they maintain their existing assets and in terms of minimising their impact on the environment. All of this will need to be done with a constant eye on cost efficiency.

Delivering networks for net zero

1.16 The energy system transition is underway and being driven by the United Kingdom (UK), Scottish and Welsh governments' legislative commitments to net

[2] Decision on accelerating onshore electricity transmission investment (ofgem.gov.uk)
[3] A Holistic Network Design for Offshore Wind | ESO (nationalgrideso.com)
[4] Ofgem and DESNZ announce joint Connections Action Plan | Ofgem

zero and the policies underpinning it. The depth and speed of elements of the transition are uncertain, which translates into challenges in managing energy system changes to the location of electricity generation, increased electricity demand and a decline in natural gas demand.

1.17 There will be large amounts of new and differently located sources of electricity supply to meet government targets for a decarbonised power sector. There will also be electricity demand increases as the economy electrifies. This will be driven and shaped by consumers' choices and behaviour, businesses, local communities and regional councils. New ET infrastructure will need to be ready to meet these evolving demands.

1.18 Global supply chain constraints currently being experienced by infrastructure industries are another key aspect that will shape our approach to RIIO-ET3. This has been caused by a multitude of factors, including the war in Ukraine, the COVID-19 pandemic and the global push towards net zero which has increased demand for raw materials, equipment and skills. Clearly some of these factors are beyond the control of the network companies or Ofgem, but nonetheless we will shape RIIO-ET3 to mitigate the impact on GB energy consumers as far as possible without placing undue risk on the TOs.

1.19 The government recently published recommendations that resulted from the Electricity Networks Commissioner's (ENC) review into accelerating electricity transmission network deployment.[5] These have featured heavily in our considerations around designing our approach to RIIO-ET3, particularly the recommendations that relate to removing Ofgem from the critical path for project development, enabling early supply chain engagement and only using competitive tendering where it won't cause delays to project delivery.

1.20 RIIO-ET3 will need to ensure that the TOs can access funding to deliver on the UK's net zero ambitions, the establishment of new strategic network plans, and network plans of their own. This will need to be done in a manner which avoids delaying investment decisions, attracts significant investment into the sector at pace, appropriately considers communities affected by the infrastructure and enables effective engagement with the supply chain that will maximise value for money for consumers. Our proposals on this are in Chapter 2.

[5] https://www.gov.uk/government/publications/accelerating-electricity-transmission-network-deployment-electricity-network-commissioners-recommendations

1.21 It will be key to ensure the TOs' ongoing resilience to factors such as climate change, asset deterioration, and physical and cyber security threats. As these are very much cross sectoral challenges, they are primarily addressed in Chapter 6 of the Overview Document, but Chapter 3 of this document briefly covers some ET-specific resilience factors.

Delivering a service that consumers value

1.22 To derive maximum value from the investments that are needed on the ET network, the TOs will need to provide a better service to their customers. This includes higher standards of network availability, stretching targets in relation to connections processes and ambitious environmental goals for the TOs themselves.

1.23 The last section of Chapter 2 sets out how we intend to push the network companies to further minimise their impact on the environment, including through better performance in the reduction of their Business Carbon Footprint (BCF), the management of leakages of Sulphur Hexafluoride (SF6), and ensuring biodiversity recovery.

1.24 Chapter 4 describes the key areas of focus for improving the quality of service provided by the TOs in RIIO-ET3. This will include, in the medium-term, more stretching targets around the speed at which the TOs provide connections, given the criticality of this in the drive towards net zero and the existing substantial length of the connections queue.

Operating at an efficient cost

1.25 It is important to ensure that the transition to net zero comes at a low cost for existing and future consumers, although as described above, we are conscious that keeping the overall, long-term cost of the transition to net zero as low as possible will require significant network investment in the short- and medium-term. We expect the TOs to deliver services and investments as efficiently as possible. In this respect, it is important to establish the cost assessment toolkit that will enable us to determine the efficient level of costs at which the TOs can carry out their activities. Together with maintaining a stable financial framework (see the Finance Annex for more detail), this is in line with the RIIO-3 outcome 'system efficiency and long-term value for money'.

1.26 Chapter 5 provides an overview of the approach to cost assessment we intend to develop for RIIO-ET3.

What are we consulting on?

1.27 This consultation, read alongside the Overview Document and Finance Annex, sets out the key policy considerations that we would like stakeholder views on in advance of reaching a decision on the methodology for RIIO-ET3 by the end of Quarter 2 2024.

1.28 In some areas, such as the major projects regime, we set out a relatively detailed policy proposal that is being built on following the Framework Decision. In other areas we are seeking more general views on the performance of RIIO-ET2 mechanisms and how these could be adapted or fundamentally changed for RIIO-ET3.

How to respond

1.29 We want to hear from anyone interested in this consultation. Please send your response to the person or team named on this document's front page.

1.30 We have asked for your feedback in each of the questions throughout. Please respond to each one as fully as you can.

1.31 We will publish non-confidential responses on our website at www.ofgem.gov.uk/consultations.

Your response, data, and confidentiality

1.32 You can ask us to keep your response, or parts of your response, confidential. We'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000, the Environmental Information Regulations 2004, statutory directions, court orders, government regulations or where you give us explicit permission to disclose. If you do want us to keep your response confidential, please clearly mark this on your response and explain why.

1.33 If you wish us to keep part of your response confidential, please clearly mark those parts of your response that you do wish to be kept confidential and those that you do not wish to be kept confidential. Please put the confidential material in a separate appendix to your response. If necessary, we'll get in touch with you to discuss which parts of the information in your response should be kept confidential, and which can be published. We might ask for reasons why.

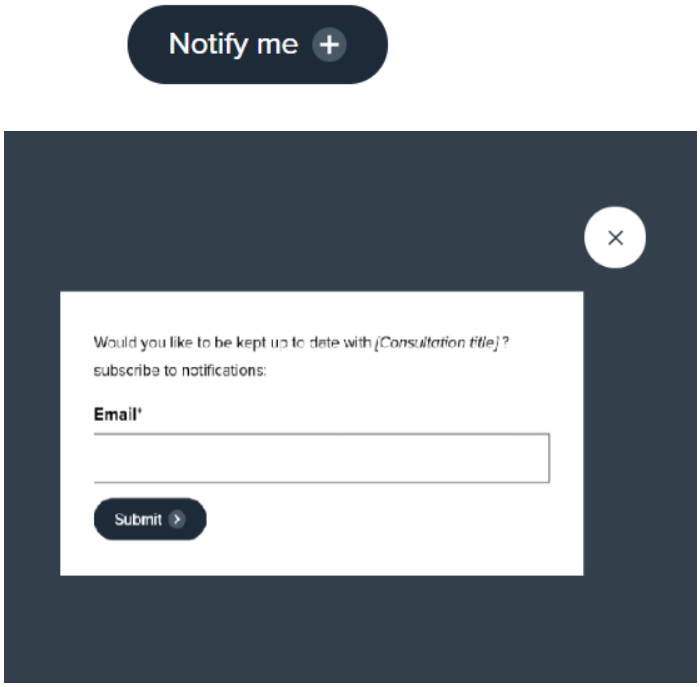
1.34 If the information you give in your response contains personal data under the General Data Protection Regulation (Regulation (EU) 2016/679) as retained in domestic law following the UK's withdrawal from the European Union ("UK GDPR"), the Gas and Electricity Markets Authority will be the data controller for

the purposes of GDPR. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. Please refer to our Privacy Notice on consultations, see Appendix 1.

1.35 If you wish to respond confidentially, we'll keep your response itself confidential, but we will publish the number (but not the names) of confidential responses we receive. We won't link responses to respondents if we publish a summary of responses, and we will evaluate each response on its own merits without undermining your right to confidentiality.

How to track the progress of the consultation

1.36 You can track the progress of a consultation from upcoming to decision status using the 'notify me' function on a consultation page when published on our website. Ofgem.gov.uk/consultations



1.37 Once subscribed to the notifications for a particular consultation, you will receive an email to notify you when it has changed status. Our consultation stages are:

Upcoming > Open > Closed (awaiting decision) **> Closed** (with decision)

2. Infrastructure fit for a low-cost transition to net zero

Introduction

2.1 The GB electricity networks will require significant reinforcement and new network build over the coming years to avoid becoming an obstacle to the UK achieving net zero. For context, the original GB national grid was built in the post-war period up until the 1970s. We now must repeat the same scale of build in 10 years. To link new power sources, mainly offshore wind and nuclear, we need to invest roughly five times more in the next seven years than in the last 30 years – this equates to about £10bn per annum.

2.2 To achieve this, we will require improved coordination of investment plans, a more strategic approach to new network build and a streamlined regulatory process which ensures Ofgem approval is not on the 'critical path'.

2.3 This chapter sets out how we propose to design the RIIO-ET3 price control to deliver this investment whilst ensuring delivery at pace, high quality, and efficient cost, in relation to the following areas:

- the role of strategic planning;
- delivery of new transmission investments driven by the CSNP;
- delivery of non-CSNP transmission investments to accommodate new load on the networks from additional generation and demand; and
- incentives on timely and high quality TO delivery.

Government's Transmission Acceleration Action Plan

2.4 On 22 November 2023 the government published its Transmission Acceleration Action Plan (TAAP).[6] This is the response to the ENC's report on accelerating electricity transmission network build (ENC Report).[7]

2.5 Since the publication of the ENC Report, we have worked closely with the government, the ESO and industry to consider its implications for the ET sector. We are supportive of the TAAP and we will continue to support the government and the ESO to take forward their actions.

2.6 The actions set out in the TAAP will support the delivery of the CSNP, which will confirm the needs case for new electricity transmission infrastructure, endorse

[6] https://www.gov.uk/government/publications/electricity-networks-transmission-acceleration-action-plan
[7] Accelerating electricity transmission network deployment: Electricity Networks Commissioner's recommendations - GOV.UK (www.gov.uk)

the design solution and confirm the delivery body, removing these tasks from the critical path, and providing early certainty to the network companies to allow them to focus on delivery. Our proposals set out in this consultation support the ambition to accelerate electricity transmission build.

2.7 This is supported by the wider TAAP recommendations on the supply chain which are broadly aligned with our proposals in this document. We highlighted the interactions with the ENC Report and TAAP in Table 1.

Table 1: Interlinkages between the SSMC and government's TAAP

Area	**TAAP reference**	**Reference in SSMC**
Acceleration of ET build	RA1: Regulatory approval process should be removed from the critical path within the end-to-end process.	Delivery of major new projects, Chapter 2
Supporting the supply chain	SS5: The longer-term CSNP should be used to support TO engagement with the supply chain and evidence the scale of investment required over a longer time-period.	Pre- and early-construction funding, Chapter 2
Supporting the supply chain	SC1: TOs should form long-term relationships with the supply chain and look to book slots and bulk purchase equipment when possible.	TO delivery, Chapter 2
Onshore competition	CT1: Onshore network contestability should be delivered in phases when certain criteria have been met.	Role of competition, Chapter 2
Standardisation in ET	SE1: A forum should be created between the FSO, TOs, equipment manufacturers and Ofgem to review and update equipment standards used within GB.	Standardisation in ET, Chapter 2

Role of strategic planning

2.8 It is imperative that network investment is carefully planned and coordinated to align with the location of new low-carbon generation, future demand and supply profiles, and optimisation with other energy vectors.

2.9 The CSNP will be key to facilitating this during RIIO-ET3 and beyond. To meet the challenge of accelerating onshore electricity transmission investment and meet the government's ambition to connect 50GW of offshore wind generation by 2030, we introduced ASTI, which was designed specifically to address recommendations from the ESO's HND for offshore wind. ASTI and the HND, in combination, represented a major step forward in strategic planning and regulatory funding. The CSNP will support RIIO-ET3 by providing the needs case that underpins approval of additional funding for major new ET projects.

2.10 Our decision on the framework for the FSO's CSNP provides more detail, but in summary:

- includes the introduction of a SSEP to set out the optimal mix and location of clean generation and storage to meet forecast demand and net zero targets. The SSEP outputs should form the inputs used to create the CSNP;[8]
- the CSNP will set out requirements for the onshore and offshore electricity transmission networks in GB as well as cross-border electricity interconnectors and offshore hybrid assets[9]. It will also make recommendations on how the system should develop to decarbonise the electricity system to meet 2050 net zero targets;
- a longer-term CSNP will be published by the FSO every 3 years from 2026. It will focus on onshore, offshore, and cross-border electricity transmission network needs (out to 2050), as well as developments in gas transmission and potential hydrogen networks; and
- a set of CSNP annual products will be published by the FSO each year between the longer-term CSNP. These products will focus on the near-term plan (approximately 12 years ahead) and include moving projects identified in the longer-term CSNP (funnel of potential projects) into a firm delivery pipeline where the needs case becomes sufficiently certain. They will also look at near-term system needs to enable the deployment or procurement of additional solutions to address residual network constraints and operability issues.

2.11 We are developing options for RESPs to take forward a similar role at distribution level, including during the next price control period for the electricity distribution networks (RIIO-ED3 or equivalent, running from 2028), but their role is not explored through this consultation.[10]

2.12 Our Framework Decision set out that RIIO-ET3 will use the CSNP as the 'needs case' to support funding requests for major new electricity transmission investments. This will ensure that new investments are underpinned by an independent, cross vector view that has been developed transparently with the support of industry. It will also provide industry with confidence on the future

[8] We expect that the government will commission the first SSEP early in 2024, and the first interim SSEP will be provided in either late 2024 or early 2025.
[9] We expect the CSNP to evolve and the first long term CSNP in 2026 will also set out recommendations for strategic gas transmission investments.
[10] See Chapter 3 of our November decision on the future of local energy institutions and governance: https://www.ofgem.gov.uk/publications/decision-future-local-energy-institutions-and-governance

pipeline of new ET projects, which will be key to providing the TOs and supply chain with certainty to progress these nationally critical projects. This aligns with the government's proposal for the regulatory approval process to be removed from the critical path as set out in the government's TAAP.

Centralised Strategic Network Plan (CSNP)

2.13 The CSNP will focus on identifying load related wider system needs and operability issues for network options development. It will address wider system needs on the Main Integrated Transmission System (MITS)[11] to:

- facilitate timely wider transmission system reinforcement; and
- extend the MITS to new areas of potential generation and demand.

2.14 The TOs will retain their responsibilities for local network planning. Some examples of local network planning are set out in paragraph 2.61.

2.15 The FSO, through the CSNP products, will provide project recommendations of what needs to be built once the needs case becomes clear.

2.16 What needs to be considered as part of RIIO-ET3 is how CSNP solutions are approved for funding, and the regulatory framework(s) to provide funding. In this chapter we have set out our thinking on this and are seeking feedback on appropriate funding mechanisms for CSNP related projects.

2.17 We recognise that the CSNP methodology (process for identifying system needs and system investments) is being developed by the ESO/FSO and will continue to evolve prior to its first use and beyond. We will ensure that RIIO-ET3 is able to adapt to any changes to the scope or use of the CSNP.

Transitional arrangements

2.18 The ESO's HND introduced a new way of planning the transmission network reinforcements to meet the government's target of 50GW of offshore wind by 2030.[12] The HND was a coordinated approach for connecting 24GW of offshore wind, and together with the 2021/22 Networks Options Assessment (NOA) refresh,[13] formed what was effectively the first transitional CSNP (tCSNP1 - published July 2022).[14] The tCSNP1 provided an offshore network design and a

[11] The MITS is defined in the Connection and Use of System Code as comprising MITS Substations and Main System Circuits. The MITs is a subset of the National Electricity Transmission System which comprises both the onshore transmission system and the offshore transmission systems.
[12] The Pathway to 2030 Holistic Network Design | ESO (nationalgrideso.com)
[13] Network Options Assessment (NOA) | ESO (nationalgrideso.com)
[14] It was not referred to as the tCSNP1 when published.

set of onshore network investment recommendations to deliver the government's target.

2.19 The tCSNP1 has given the TOs greater certainty on the need for reinforcement projects as the needs case recommendation will not be revisited. To ensure that onshore projects are delivered at pace, we introduced the ASTI mechanism that will accelerate funding for HND projects.[15]

2.20 The second transitional CSNP (tCSNP2) will consist of the Holistic Network Design – Follow Up Exercise (HND-FUE) and the 2023 NOA. The HND-FUE looks to provide an offshore network design that connects an additional 20.7GW of offshore generation in Scotland. The tCSNP2 (expected in early 2024) will provide an offshore network design and a set of onshore network investment recommendations to deliver the additional offshore generation.

2.21 We expect the tCSNP2 to inform a large proportion of the TOs' load related Business Plans for the next price control period and will work with the TOs and industry throughout 2024 on the funding arrangements for these projects. Our intention is to learn from and adapt ASTI as quickly as possible, and to implement some key elements for funding network build in RIIO-ET3 that are identified in this chapter for use on tCSNP2 projects (eg the use of Independent Technical Advisors (ITA)). We will work with industry to identify how we can use this approach for projects identified in tCSNP2 and will formally consult on this in 2024.

2.22 For clarity, Figure 1 below sets out the major differences between strategic projects captured in tCSNP2 and CSNP.

[15] Decision on accelerating onshore electricity transmission investment | Ofgem

Figure 1: Comparison of strategic projects between tCSNP2 and CSNP

tCSNP2	CSNP
• In whole or in part, load-related. • Needed to connect additional 16.9GW from Scotwind and 3GW for Celtic Sea. • Specifically for projects to support HND-FUE.	• In whole or in part, load-related. • For projects of national need on the MITS, primarily to enable greater power transfer between regions and to encourage the market to address emerging operational issues.

Delivery of major new projects

2.23 Supply chain challenges and ineffective contracting are key risks to building networks to enable net zero on time and at reasonable cost. The regulatory framework must adapt to deal with the output of the tCSNP2, CSNP and supply chain challenges. RIIO-ET3 and future ET price controls will have a very different mix of totex spend compared to previous price controls due to the scale and timings of electricity network investments required. We need a regulatory regime that can optimise the time, cost and quality of electricity network infrastructure for consumers and help us reach net zero.

Role of competition

2.24 Our Framework Decision set out that competition for the market should remain an option for delivery of large new infrastructure in future price controls, particularly in the ET sector. This would likely involve open competition between bidders for the opportunity to design, build and construct new ET infrastructure.

2.25 Since our Framework Decision, the government published the TAAP. This includes confirmation that Ofgem will be able to identify the first projects eligible for competition in summer 2024, announcing the launch of a competitive process as soon as possible later in the year once the relevant competition models have been sufficiently developed. In order to ensure that this is deliverable, we will be focused on the suitable design of a working competition model for such projects throughout 2024.

2.26 During RIIO-ET3, the CSNP will be utilised to identify suitable projects for delivery via competition. A key consideration in this will be ensuring that delays to critical projects are avoided.

2.27 The FSO will include a process in the CSNP methodology that ensures third-party options can be fully considered within the CSNP development process alongside TO-proposed options. The FSO's CSNP methodology should also integrate the design of the detailed competition delivery model (which we will consult on next year) and set out how the CSNP (and its process) will recommend appropriate projects for competition. This should have particular regard to ensuring that the tender process does not lead to delays in commissioning of network assets.

2.28 However, we expect that a large majority of projects will continue to be designed and procured by the existing TOs during RIIO-ET3.

TO delivery

2.29 For major new ET projects, our Framework Decision set out that we would look to evolve the ASTI framework[16] for RIIO-ET3. We also set out that we consider that ASTI provides a solid foundation to build upon in the next price control and strikes a balance between accelerating delivery and protecting consumers. Our Framework Decision for major new ET investment is summarised in Table 2 below.

Table 2: Framework Decision on major projects regime for RIIO-ET3

Topic	Description
The needs case for major ET projects for wider system reinforcement	The FSO will confirm the need for large new load-related ET projects through the CSNP. Ofgem will be embedded in the governance of this.
Interim approach for RIIO-2/RIIO-3 projects	For tCSNP2 projects, we will put in place an approach that aligns as appropriate with our proposed framework for RIIO-ET3.
Directly competed projects by the FSO	Some projects will be directly competed by the FSO, and this process will be developed as part of the CSNP.
Automatic funding for early projects costs	TO-led projects will receive automatic funding for the costs of pre- and early-construction work.

[16] In December 2022, we published our decision to introduce a new framework to facilitate delivery of the projects recommended by the first HND. Within this framework, Ofgem assesses and funds large, strategic onshore electricity transmission projects that are required to deliver the Government's ambition to connect up to 50GW of offshore generation to the electricity network by 2030. It provides TOs with pre- and early-construction funding (PCF and ECF) initially, followed by full construction funding, as well as an ODI-F to incentivise the timely delivery of these projects.

Topic	Description
Independent Technical Advisors (ITA)	Appointment of an ITA to provide assurance to Ofgem of effective design decisions, effective procurement and delivery.
Target costs aligned with efficient procurement	The TOs will be required to demonstrate efficient procurement prior to moving into the construction phase. As the TOs finalise procurement for delivery of a project, Ofgem will set target costs aligned with efficient procurement.
Data sharing infrastructure requirement	The TOs will be required to connect to and use the data sharing infrastructure required by digitalisation.
Delivery incentives	Delivery incentives will be implemented to ensure timely and high-quality delivery.
Holistic financial framework	Financial framework subject to the five-year review of the overall price control which will include allowances that enable equity financing.

2.30 This section looks to build on the Framework Decision to seek further views from stakeholders on the detailed regulatory design of our approach to funding major new ET investments identified by the CSNP during RIIO-ET3.

Materiality threshold

2.31 In terms of which projects are covered by the regime described in this section, we are minded to retain the £100m materiality threshold for major projects that was used by the Large Onshore Transmission Investment (LOTI) re-opener in RIIO-ET2. We consider that this approach would provide a degree of consistency between price controls, but we are open to other suggestions.

Pre- and early-construction funding

2.32 Pre-construction Funding (PCF) and Early-construction Funding (ECF) are essential to enable the TOs to have the finances readily available to progress major projects quickly from an early stage through to beginning construction.

2.33 Continuing with the precedent set by ASTI, our Framework Decision set out that PCF (to support design and consenting) and ECF (to support procurement and supply chain engagement) will be provided to TOs without regulatory delay following the CSNP to ensure that the regulatory model doesn't delay early progress on major new ET projects.

Scope of PCF and ECF

2.34 For PCF we consider that the following areas will be important to fund:

- surveys, assessments and studies that inform environmental, consenting and design feasibility decision making;

- stakeholder engagement and consultation which will be key to informing project design and progressing through the consenting process;
- project design and engineering development that move the project from being 'lines on a map' to a detailed project proposal that can be taken to the market for procurement; and
- tasks associated with wayleaves and planning applications.

2.35 Our view is that PCF in these areas will enable TOs to submit high-quality and robust planning applications, minimising the risk that planning does not get approved, and engage the supply chain early on.

2.36 For ECF we consider that the following areas will be important to fund:

- market engagement activities that are key to building market interest in tendering for the project;
- ordering equipment;
- strategic land purchases and early procurement commitments; and
- early enabling works.

2.37 Our view is that ECF in these areas will enable the TOs to engage early with the supply chain (eg to reserve factory slots) where necessary and begin early aspects of construction, such as civils works, in advance of full funding approval for the project from Ofgem so that work to start the project need not be delayed.

Operational aspects of PCF and ECF

2.38 ASTI provided PCF of 2.5% of the total forecast totex for the portfolio of ASTI projects and an ECF provision of up to 20% of the forecast total expenditure across the programme. Under ASTI, PCF and ECF are provided on a portfolio basis for all projects, allowing the TOs to combine the respective funds across multiple projects to enable bulk ordering of equipment, where this eases supply chain engagement.

2.39 The efficiency of incurred PCF and ECF will be assessed ex post under ASTI, with reference to guidance that has been provided ex ante. ASTI also has a re-opener that allows for additional PCF and ECF to be sought in specific circumstances.

2.40 We welcome views on whether these operational aspects of PCF and ECF work effectively and should be retained for future projects, or whether changes to the form of cost assessment would be appropriate (eg to shift further to a cost passthrough approach, subject to a reasonableness test where costs rise well above expectations/benchmarks).

Independent Technical Advisor

2.41 Our Framework Decision set out that for new major ET projects in RIIO-3 we will use an ITA to improve our confidence regarding project cost and design, which in turn should speed up decision making and remove us from the critical path of these large projects. The ITA will also help reduce the knowledge asymmetry which exists between Ofgem and the TOs and it aligns with the TAAP by ensuring the risk sharing and pricing mechanisms used by the TOs in their procurement represents the most efficient value for consumers.

2.42 The following key benefits could be realised by introducing an ITA into the next price control:

- assurance of key design decisions from an early stage could provide us with comfort regarding a key driver of future costs;
- assurance of procurement process would enable us to undertake faster cost assessments which will be increasingly reliant on the market revealing efficient prices; and
- a continued role during the construction phase would provide a similar function for any issues that arise during construction requiring regulatory intervention.

2.43 We propose that the ITA would, under a non-disclosure contract, be allowed access to material relating to TO project delivery. This would allow it to verify information and provide assurance to us on the TO's delivery of the project, at the time it is generated, including in relation to efficiently incurred costs. Decision-making on TO allowances would remain with Ofgem, as described further at paragraphs 2.51-2.54.

2.44 We propose that the ITA would be in place with TO project teams from early on in the design process (ie after the CSNP) throughout design and procurement, and during construction because:

- the ability to meaningfully influence cost is highest at the early design phases of a project (ie key decisions that drive project costs will be taken early in project development);
- early design decisions make the difference between a fit for purpose or a gold-plated design; and
- use of an ITA would accommodate early contractor engagement.

2.45 We consider that there are several options for how the ITA would be structured. Illustrative examples are set out in Table 3 below.

Table 3: ITA options (all option choices are independent of each other)

	Option A	**Option B**	**Option C**
Organisational Structure	A private consultancy or engineering firm could be appointed to take on the role of the ITA. This approach has been adopted by various regulators in the past, eg Ofwat, the Civil Aviation Authority (CAA) and the Office of Rail and Road (ORR). A variation on this option is for a consortium of firms which each bring different skillsets (ie engineering, finance, project management) to be jointly appointed as the ITA.	The ITA could be formed by a group of individual experts who are appointed based on their experience and expertise. An example of this approach is the Independent Investment Programme Advisory Group which is designed to ensure efficient use of funds by Transport for London.	A combination of private firms (Option A) and individual experts (Option B) could both be used to form the ITA, eg a private consulting firm could be appointed to provide scrutiny into the TOs' procurement/project management practices while independent individual experts could be appointed to input on key legal/technical/financial decision points. The CAA and ORR have both considered the appointment of independent experts alongside their use of ITA organisations.
Contract Structure	A new ITA could be contracted on a project-by-project basis. This approach has been adopted by Ofwat in its use of ITAs for the upcoming Direct Procurement for Consumers framework.	An ITA could be contracted for an entire programme of projects that will be delivered over a period of time, ie RIIO-ET3. This approach has been adopted by a range of other GB regulators in different contexts.	A framework of organisations which can act as an ITA could be appointed for a period of time. Competitions could then be run to procure services as needed. Each organisation could qualify with different skillsets which may be needed over the duration of the framework. This approach has been adopted by the ORR in their use of the Independent Reporter function.
Scope/Procurement	The TO will define the scope of work	Ofgem is solely responsible for	Ofgem defines the scope of work that the

	Option A	**Option B**	**Option C**
	that will be delivered by the ITA and the terms and conditions of work delivered and run its own ITA procurement process. This approach has been adopted by Ofwat in its use of ITAs for the upcoming DPC framework.	defining the scope of work that the ITA needs to deliver. Ofgem runs and defines the procurement process through which the ITA is appointed.	ITA must deliver at a high-level, but the TO is responsible for defining the detailed terms of reference as part of its procurement process. We can also decide on some key features of the ITA procurement process (eg the weighting that must be given to technical and commercial scoring) which is otherwise run by the TO. This approach has been adopted by the CAA in its use of the Independent Reporter function.
Procurement/ Funding	The ITA could be funded by the TO through the existing price control funding mechanism. The level of funds could be set by the TO (ie if the TO has responsibility for running the ITA procurement process and defining the ITA scope as discussed above) or by Ofgem/the FSO. This approach has been adopted by the ORR in its use of Independent Reporters where Network Rail recovers the cost of Independent Reports through its economic regulation framework.	The ITA could be charged to the investment projects. Under this approach, the cost of the ITA would amount to an uplift on project costs. These funds would ultimately need to be recovered by the TO. This approach has been adopted by Ofwat in its use of ITAs for the upcoming DPC framework.	Funding for the ITA could be jointly provided by a combination of Ofgem/the FSO/the TO. The proportion of funding from each source would need to be agreed in advance. New revenue recovery mechanisms may need to be developed to recover funds from the FSO and us. Recovering funds from the FSO/us is likely to be inconsistent with an approach whereby the TO is solely responsible for defining the scope of the ITA and running the procurement process (discussed above).
Duty of Care	The ITA could hold a legal duty of care to Ofgem only.	The ITA could hold a joint duty of care to	No formal duty of care is established but the ITA acts independently

	Option A	**Option B**	**Option C**
	This would solidify the ITA's position as an instrument of the regulator within the TO business.	Ofgem and the TO (and the FSO). This approach has been adopted in various cases, eg under Ofwat's DPC framework the ITA will have a formal duty of care to the relevant water company, to Ofwat, and to the 'Competitively Appointed Provider'.	under an agreed set of principles.

2.46 In assessing these options, we will consider the extent to which the ITA role will need to be project specific to accommodate different stakeholder assurance requirements, and balance this against the consistency that could be achieved by using one ITA for numerous projects. In either case, the ITA will need a broad range of skills and expertise as assurance requirements vary over the life of the project.

Delivery incentive

2.47 The ASTI framework includes a timely delivery incentive with rewards and penalties for early or late delivery against a target date, based on forecast constraint costs. There are also accompanying Price Control Deliverables (PCDs) and licence obligations (LOs) to ensure delivery of all outputs.

2.48 Our Framework Decision stated that we would build on this incentive to provide even sharper incentives on the TOs around timely and high-quality delivery during RIIO-ET3. Details of the ASTI financial Output Delivery Incentive (ODI-F) are set out in Table 4 below.

Table 4: ASTI ODI-F

Feature	**ASTI decision**
Basis for setting ODI-F rates	Daily reward and penalty rates for each project will be set at 30% of the forecast constraint cost impact of a one-year delay divided by 365.

Feature	ASTI decision
Target delivery dates	31 December of the year in which the ESO has required the project to be delivered.
Application of penalties under the ODI-F	Where a project is not delivered by the target date, no penalties would apply for the first 12 months of the delay. Penalties at the relevant daily rate would apply from the first day after 12 months from the target date until the date of delivery.
Application of rewards under the ODI-F	Where a project is delivered earlier than 12 months after the target date, rewards at the daily rate would apply for each day between the date of delivery and the last day of the 12th month after the target date.
Aggregate project-level cap on rewards and penalties	Aggregate rewards and penalties for each project are capped at 10% of forecast totex for that project. In addition, daily rates are constrained so that: • rewards and penalties for each project in any 12-month period are capped at 5% of forecast totex; and • rewards and penalties for each project in any 12-month period are subject to a minimum of 2% of forecast totex.

2.49 Given the importance of these investments to GB consumers we plan to review whether an evolution of the ASTI ODI-F will be sufficient in holding the TOs to account for delivery. It may be necessary to strengthen the financial penalties and rewards that TOs are subject to in order to incentivise timely delivery, though we will also carefully consider the level of risk that this subjects the TOs to. In addition to considering this for major projects, we will also review how the TOs are held to account for the smaller investments, discussed later in this chapter, delays to which can be equally detrimental.

2.50 We intend to work with the TOs and industry through this consultation period to consider whether, and how, this incentive could be strengthened to account for the urgency with which new network build needs to be delivered.

Cost assessment for major new projects

2.51 For the majority of project costs (ie excluding PCF and ECF) our Framework Decision was to retain a targeted project-based assessment of ex ante costs which uses cost sharing incentives to ensure that the TOs are appropriately incentivised to deliver the most cost-efficient solution on behalf of GB consumers.

2.52 However, to reflect the importance of avoiding delays on these projects and the significantly constrained supply chain, the form of cost assessment will fundamentally differ from the past in that:

- direct costs will be set by the market. Where we can see an appropriate tender process has been followed and unit rates are broadly consistent with

our expectations there will be limited challenge to direct costs. Open book transparency of direct costs tendered by the supply chain and oversight from the ITA will be key in helping provide us with confidence in this area, enabling fast decision making; and

- indirect costs can be more easily benchmarked across projects, so we will continue to assess these on a project-by-project basis.

2.53 This should allow cost reviews that are quicker (3-5 months will be our target) and run in parallel with project delivery, which will be key to avoiding delay. This new approach to cost assessment is currently being implemented for ASTI. Thus, in addition to taking feedback through this consultation, we will build on learnings from the ASTI experience. We propose to use re-openers within the construction period on a project-by-project basis. When assessing whether or not to use construction-period re-openers we'll consider factors such as the Totex Incentive Mechanism (TIM) rate applicable to the company, whether costs are too uncertain to set upfront, and whether setting ex ante costs would place an unacceptable level of risk on the TOs.

2.54 The effective regulation of major projects also requires a change to the timing of project reviews, away from a five-year cycle and towards a responsive framework aligned with TO delivery schedules. As such, we'll ensure that guidance on the timing of our cost assessment avoids introducing any delays into TO project delivery.

Smaller CSNP-driven works

2.55 Additional sub-£100m load related schemes may also be identified by the CSNP during RIIO-ET3. The price control will need a regulatory approach to fund these.

2.56 For the projects that do not meet the major projects threshold, we propose to introduce a funding mechanism that retains the characteristics of the regulatory regime for major projects in so far as:

- project need being determined by the CSNP;
- the price control providing automatic ECF and PCF, which we propose to be consistent with the basis we use for projects over £100m; and
- a streamlined cost assessment process.

2.57 We will also consider how the TOs should be held to account for timely delivery of these smaller works, taking into account our views set out in Paragraph 2.49 above, which we consider to be similarly relevant for these lower value works.

2.58 We would still propose to undertake an ex ante cost assessment of eligible projects to ensure that this is done as quickly as possible to avoid regulatory delay.

2.59 We are continuing to consider the most efficient and pragmatic means of approaching the cost assessment of sub-£100m schemes with a focus on balancing cost accuracy and timely delivery. For example, we could batch certain types of projects together for assessment, based on either location or value, and what the optimal timing of undertaking the assessment may be. Alternatively, we could assess each project individually, at the time best suited to delivery of that specific project.

ETQ1.	What are your views on the materiality threshold that should be set to determine which projects fall into or out of our proposed major projects regime?
ETQ2.	What are your views on our proposed approach to setting PCF and ECF, the scope of PCF and ECF and continuing the 'operational aspects' introduced under ASTI?
ETQ3.	What are your views on options for how the ITA could be implemented for major new ET3 investments, and what are your views on its role and scope?
ETQ4.	What are your views on introducing a delivery incentive into RIIO-ET3 for major projects that is broadly similar to the ASTI ODI-F? Do you consider that delivery should be more strongly incentivised than under ASTI, and if so how?
ETQ5.	What are our views on our proposed cost assessment approach for major new RIIO-ET3 projects?
ETQ6.	What are your views on our proposed treatment of sub-£100m schemes identified by the CSNP?

Load related expenditure outside of the CSNP

2.60 Load related expenditure (LRE) refers to the costs of reinforcing the network to meet changing customer and consumer requirements. For example, LRE may include upgrading the voltage or capacity of existing lines, cables, substations, or building new ones to accommodate increasing power flows or to reduce losses. LRE can also include wider works, ie works associated with reinforcing the network to accommodate new generation and ensure compliance with the national electricity transmission's System Security and Quality of Supply Standard (SQSS).

2.61 As described in the section above, large portions of LRE in RIIO-ET3 will be determined by the CSNP. However, in RIIO-ET3 the TOs will still retain the majority of local level planning of the electricity transmission networks. We intend to categorise this in RIIO-ET3 as LRE, as it has been in previous price controls. Some examples of local network planning are:

- enabling works that are triggered by one or more connections of new generators to the ET network, which are typically regional or local, sole use or shared use investments (new or upgraded). They must be constructed prior to connection;
- local works to maintain compliance with the NETS SQSS, which are typically, connection related, sole use or shared use investments (ie non area element of Enabling Works); and
- regional/anticipatory investment on the network, to create additional capacity at substations for projected connections at the same time as non-load works, or to expand grid supply point for anticipated demand/generation changes on the electricity distribution network.

2.62 As detailed in Chapter 5 we propose to evolve the approach to the cost assessment of LRE for RIIO-ET3.

2.63 For the most part, we consider that RIIO-ET2 provides a solid and flexible foundation for ensuring the funding of LRE work that sits outside of the CSNP; enabling a balance between cost, quality and timely delivery. Table 5 below provides an overview of the LRE framework used in RIIO-ET2 we propose to adapt for RIIO-ET3 LRE.

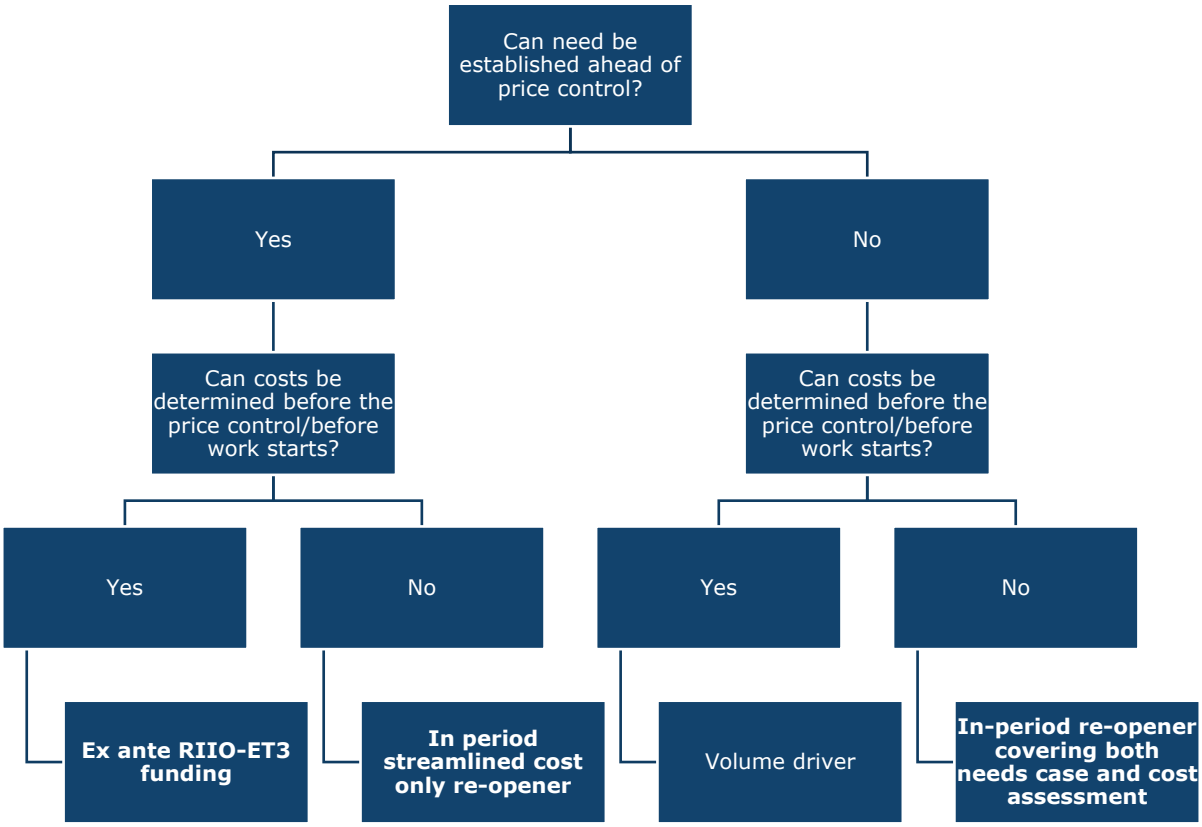
Table 5: Funding approaches for non-CSNP

Output type	**Description**
Ex ante allowances (and PCDs)	The amount of money Ofgem allocates to TOs to cover the efficient costs of delivering the baseline outputs, as identified at the start of the price control. In RIIO-ET2 we used a large number of PCDs to capture outputs funded through baseline allowances and ensure that the conditions attached to the funding are clear up-front. We plan to revisit the design and use of PCDs in RIIO-3 - please see Chapter 6 of the Overview Document.
Re-openers	A type of Uncertainty Mechanism (UM) that allows Ofgem to assess changes the network companies' allowances, outputs and delivery dates during the price control period based on new information or events.

Output type	Description
Volume Drivers	A type of UM that automatically adjusts the network companies' funding based on actual volume of work they deliver during the price control period.

2.64 Figure 2 sets out our proposal for how we may determine the appropriate funding route for RIIO-ET3 LRE. We consider that using different funding mechanisms that best reflect the relative certainty of need and cost ensures the optimal balance between cost, quality and timely delivery.

Figure 2: Determining LRE funding



2.65 Where the TOs can evidence a clear needs case and costs for the work can be well justified, we propose to provide baseline funding for these schemes.

2.66 Where the needs case can be robustly evidenced in the RIIO-ET3 Business Plan, but there is cost uncertainty, we propose to use a streamlined re-opener mechanism that only assesses the efficiency of the costs once they reach a pre-agreed maturity threshold.

2.67 We propose to use volume drivers for network investments that have the following characteristics:

- uncertainty of needs case;

- work is broadly repeatable, meaning that each project will have a similar scope and scale;
- work is measurable, meaning that they can be quantified by metrics that reflects the volume of work delivered; and
- unit costs can be estimated with a high degree of accuracy and consistency based on historical data or benchmarks.

2.68 Where both need and cost is unstable or uncertain, we propose to use a standard re-opener mechanism to review both the need and cost for funding these schemes.

2.69 We will also consider how the TOs should be held to account for timely delivery of load-related expenditure during RIIO-ET3, taking into account our views set out in paragraph 2.49 above, which we consider to be similarly relevant for these lower value works. Our approach here will need to strike a careful balance between providing appropriately sized allowances, giving the TOs flexibility to respond to changing circumstances in relation to load and non-load related investment drivers, and holding the TOs to account for specific deliverables. This will require us to draw on a range of price control mechanisms, including PCDs, UMs and, potentially, ODI-Fs.

Regional strategic investments and local works

2.70 As set out at Paragraph 2.61, the TOs will continue to be responsible for planning local reinforcement needs outside the CSNP.

2.71 For regional strategic investment on the network, we understand that the TOs are proposing a holistic approach for investments at specific sites with overlapping investment drivers. Given the variety of factors driving the need for these projects (described below), we propose to refer to such works as 'shared driver' projects during RIIO-ET3.[17] Broadly we envisage projects that relate to two or more of the following drivers of investment to be covered under 'shared driver' mechanism(s):

- asset health related substation refurbishment or upgrade where it is efficient to invest beyond a like-for-like asset replacement to deliver best value for money for consumers;

[17] The TOs have been referring to such projects with various different names throughout our FSNR engagement. For example, NGET uses the term 'site strategies'.

- SF6-related strategic replacement;
- forecast generation and demand requirements;
- upgrades directly triggered by CSNP or tCSNP2 projects; and
- regional and local requirements on the network to meet SQSS compliance.

2.72 We consider the best approach is one that aligns with the relative certainty of the needs case and the cost. To flexibly manage works with significant overlapping investment drivers, we will determine the appropriate funding route in accordance with our proposal set out in Figure 2, which would see these works funded through a combination of up front ex ante funding and in-period re-openers.

2.73 We welcome views regarding how the TOs should evidence investment requirements, and how they should demonstrate the optioneering against the complexities of multiple variables, eg forecast customer contracted background, SF6 commitments, forecast asset conditions, availability of bays, outage availability slots, and actual physical space.

Generation and demand connection - volume drivers

2.74 Customers that connect to the electricity transmission network are generally in two categories, generation or demand, notwithstanding those that provide other services such as voltage control. The former includes electricity generators and storage operators, and the later includes industrial or large commercial sites, and Distribution Network Operators (DNOs).

2.75 For generation connections, the work typically includes building additional capacity at an existing or new substation. It may also require the reinforcement of the existing network and can include new circuits or cables to connect it to the existing transmission system.

2.76 For demand connections, the works required to provide additional capacity can range from installing a new bay at an existing Grid Supply Point (GSP), to constructing an entirely new GSP, and includes circuits and cables to connect it to the transmission system.

2.77 Due to the customer-led nature of these works, there is uncertainty in the future investment necessary to accommodate the connection of new customers to the electricity transmission system. We consider that in RIIO-ET3 there will be a need to retain a volume driver that provides the TOs with immediate funding for each connection they deliver. This should allow the TOs to respond to customer

requests more efficiently and effectively, and to recover their costs in a timely manner.

ETQ7.	What are your views on our proposal for load-related expenditure outside of the CSNP, how these mechanisms can be improved and streamlined, and the appropriate thresholds for the mechanisms?
ETQ8.	What are your views on our proposal for 'shared drivers' projects, how TOs need to evidence investment requirements and how they can be held to account for delivery?
ETQ9.	What are your views on our proposal that there is a need for generation and demand connections volume drivers in RIIO-ET3, and how, if at all, they should change relative to those used in RIIO-ET2?

Standardisation in ET

2.78 We stated in our Framework Decision that we consider there is scope for standardisation to play a role in ensuring that the detailed design decisions that are made by operators are done for the longer-term benefit of consumers.

2.79 Where possible we expect the TOs to use standards designs and standard equipment to keep costs down. However, where innovation and use of novel equipment can deliver better long-term outcomes for consumers, we would expect the TOs to pursue these solutions.

2.80 The government's TAAP identifies the need for a forum between the FSO, TO equipment manufacturers and Ofgem to review and update equipment standards used within GB recognising the following challenges:

- equipment standards in GB differ from those in other regions, creating barriers for equipment manufacturers and innovators;
- equipment standards are not consistent across the three TOs in GB, requiring bespoke solutions for different TOs; and
- non-standard specifications can result in increased costs and longer lead times for the supply chain.

2.81 The key objective of the standardisation forum is to define what types of standardisations are actually required on the system. It then has subsequent objectives to find the right balance between standardisation and customisation, to achieve the benefits of consistency, low whole-life cost and reduced construction time, whilst enabling innovation, flexibility and ensuring the outcomes are in interest of consumers.

2.82 We agree with the government's proposal. We propose to work with the ESO/FSO and the TOs to set up a forum that will evaluate the decisions made on the equipment standards. The forum will make sure that the standards are consistent with the needs case, which will depend on the results of the discussion between the ESO/FSO and the ENA.

2.83 We recognise that standardisation is an iterative process, however we are keen to see the deployment of innovative and standardised 'plug-and-play' solutions (eg the use of air insulated switchgear over gas insulated) where appropriate.

Minimising networks' impact on the environment

2.84 The delivery of an environmentally sustainable network will be a significant part of achieving the UK's net zero vision. This will be even more the case in RIIO-ET3 given the large amount of new network assets that the TOs will need to build.

2.85 We are committed to providing support to reduce the harmful impact that the transmission network and related business activities can have on the environment.

2.86 Our RIIO-ET2 environmental framework focused the TOs on being more transparent on the environmental impacts of their networks and accountable for the mitigation actions they are taking to reduce these impacts. The core environmental outputs and incentives in RIIO-ET2 were:

- Environmental Action Plan (EAP) and Annual Environmental Report (AER): ensuring that the TOs take responsibility for the environmental impacts arising from their networks and are more transparent in what they are doing to mitigate these;
- Business Carbon Footprint (BCF) ODI-R: setting a common reputational incentive for the TOs on their respective BCF reduction targets;
- Insulation and Interruption Gas (IIG) leakage ODI-F: incentivising a reduction in leakage of Sulphur hexafluoride (SF6) and other IIGs from assets on the ET network, and to support the transition to low greenhouse gas alternative IIGs;
- Visual Amenity in designated areas provision: funding mitigation projects that reduce the visual amenity impacts of existing infrastructure in National Parks, Areas of Outstanding Natural Beauty, and National Scenic Areas; and
- Environmental Scorecard (NGET only): incentivising NGET to outperform selected RIIO-2 targets in their EAPs.

2.87 In this section we set out our proposed approach for the TOs to safeguard the environment in RIIO-3, building on an assessment of the RIIO-2 mechanisms. Our aim for RIIO-ET3 environmental performance are:

- to mitigate environmental impacts that arise from network activities and increase transparency on TO actions and plans to decarbonise in line with net zero;
- to ensure that the TOs consider biodiversity and the climate crisis in new construction and mitigate environmental impacts prior to construction; and
- improved information sharing and cooperation between the TOs on environmental initiatives.

2.88 The EAP, AER, BCF and Environmental Scorecard mechanisms all apply to at least two of the sectors, so we have described our views on those mechanisms in Chapter 4 of the Overview Document. The end of this section discussed company specific environment outputs.

Insulation and Interruption Gas Leakage ODI-F

RIIO-ET2 background

2.89 SF6 is a highly potent, industrial greenhouse gas with a global warming potential 23,500 times that of carbon dioxide. Widely deployed over many decades in electrical switchgear, it has been favoured by the industry for its technical properties as an effective electrical insulator and in preventing short-circuits.

2.90 SF6 gas is used in some high voltage (HV) switchgear because historically its excellent insulating and interruption properties have not been matched. This has driven an increasing level of use since its inception in the 1980s. Different types of equipment have different leakage rates with Gas Insulated Switchgear generally being the highest emitters. However, these assets are predominantly sited in areas where there are severe corrosive environments or physical space constraints, including but not restricted to densely populated urban areas or coastal positions. As such, there have been efforts to find replacements for SF6 with a number of alternatives being developed, procured and installed in RIIO-ET2.

2.91 Fugitive emissions of SF6 and other IIGs, are the biggest single component of the TOs' BCF that are directly within company control.

Incentive design

2.92 We operate an IIG ODI-F in RIIO-ET2 to encourage the TOs to consider lifetime costs (including the environmental impact of the expected emissions) when making decisions about SF6 assets, and to improve the management of, and reduce leakage rates from, SF6 assets operating on the system.

2.93 The IIG ODI-F is a symmetrical financial incentive. The TOs are subject to a reward or penalty based on the difference between their actual emissions and their baseline leakage target. Each TO has a different baseline leakage target depending on the stock of IIG assets installed on its network and historical leakage rates. The baseline target is adjusted each year to account for asset disposals and additions, as well as for interventions to repair leaking assets that have been funded under the price control.

2.94 The value of the incentive rate is set each year based on the non-traded price of carbon recommended by the HM Treasury Green Book supplementary guidance on valuation of greenhouse gas emissions.[18]

2.95 The TOs must report on IIG emissions in the annual regulatory report and the AER.

TO performance

2.96 In the first two years of RIIO-ET2, the TOs have outperformed against their target. We have also seen all three TOs progress on installing SF6 free switchgear at 400kV.

2.97 NGET also has specific PCD for improvement of leaking assets. Some of these projects have been delayed with significant impact to the environment but are on track to be completed by the end of RIIO-ET2.

2.98 The TOs' efforts to manage emissions from leaks from existing SF6 assets have improved relative to RIIO-ET1. We have also seen that the TOs' trajectories look set to exceed the targets we set, as in many cases they are performing much better than expected in the first two years of RIIO-ET2.

[18] Green Book supplementary guidance: valuation of energy use and greenhouse gas emissions for appraisal - GOV.UK (www.gov.uk)

Table 6 TO IIG rates in RIIO-ET2

Tonnes of CO2e	**2018/19 baseline**	**2021/22**	**2022/23**	**Change vs Baseline**
SPT[19]	20,103	12,196	6,839	-66%
SHET[20]	1,925	2,777	4,531	135%
NGET[21]	272,114	229,977	223,003	-18%
Total	294,142	244,950	234,373	-20%

2.99 We consider that the IIG incentive has been effective in driving improved management of SF6 assets, as shown by the overall decrease in emissions from leakage. However, due to new assets being installed, the total volume of IIG used on the ET networks is increasing. It is therefore crucial that in the next price control period, mechanisms are designed to seek to manage the risk and challenges posed by installing new assets.

IIG considerations for RIIO-ET3

2.100 We propose to retain a symmetrical IIG ODI-F for all the TOs in RIIO-ET3. Our view is that any financial incentive should focus on reducing the leakage rates, improving management of SF6 assets, and driving a reduction of SF6 in the system. We propose the incentive targets are consistent with the IIG emission reduction pathway that each TO has developed for their BCF science-based target.

2.101 We consider that there could be a case for including a dead band range around the target level of emissions that do not lead to any penalties or rewards.[22] This would allow some flexibility to accommodate timing issues in related emission reduction activities that could be subject to re-scheduling because, for example, supply chain issues.

2.102 We think there may also be an argument to review the process that allows TOs to submit claims to exclude IIG emissions from their incentive performance as a result of exceptional events. Unlike the Energy Not Supplied ODI-F where such a process guards against, for example, third party damage, asset health and therefore the risk of IIG emissions is arguably within a TO's control. Given this,

[19] SP_Transmission_Annual_Environmental_Report_2023.pdf
[20] Annual-Sustainability-Report-2023.pdf
[21] AER NGET, download (nationalgrid.com)
[22] The purpose of a dead band is to allow for fluctuation in performance that might be due to some uncontrollable factors.

and the significant impact of IIG emissions on a TO's BCF, it may be appropriate to review what qualifies as an exceptional event and or what further evidence should be provided in support of such claims.

2.103 We propose that the TOs should use AER Commentary to provide consistent and comprehensive information on the use of SF6 and other IIGs. This should include:

- the quantity and type of any SF6 currently installed;
- the quantities of SF6 added during installation, maintenance or servicing due to leakage;
- for decommissioned equipment, the measures taken to recover and dispose of any SF6;
- a summary of the interventions that have taken place over the previous year;
- the quantity and type of any alternative to SF6 asset;
- reporting on exceptional events on actual leakage; and
- a forecast for future volumes of IIGs, including SF6, on its respective network.

2.104 Acknowledging the highly damaging impact of SF6 on the network, we encourage the TOs to continue their collaborative work on the development of approaches to replace SF6 assets with alternative equipment that has a lower global warming potential than SF6, with support available through the innovation stimulus mechanisms where appropriate. We recognise that the industry is in a transitional period between SF6 and more environmentally friendly alternatives, and that in a range of circumstances SF6 is likely to be required to be used during RIIO-ET3. However, where efficient to do so, the TOs should pursue alternatives. We expect the TOs to consider the whole life costs when considering SF6 filled assets. While there are alternative gases on the market, the costs of these assets are likely to be more expensive than their SF6 filled equivalents in both installation and ongoing operation. We recognise that a balanced approach is required and we expect the TOs to provide proportionate optioneering and development to evidence the use of IIGs where these are considered appropriate.

2.105 During RIIO-ET3, we do, however, recognise that new regulations could be introduced in the UK to ban the use of SF6 in new high-voltage circuit breakers and switchgear.[23] Banning SF6 from future grid installations would mark an

[23] The European Commission has provisionally agreed to new regulation of harmful greenhouse gases, including the phasing out of SF6 from all new equipment for electrical transmission by 2031: EU legislation to control F-gases (europa.eu)

important turning point for reducing its use and harmful environmental impact in the long term. However, with switchgear typically lasting around 40 years, it will take some time before electricity networks are totally SF6 free.

2.106 Notwithstanding a potential strengthening of regulation on SF6 use in future, we consider that a financial incentive will still be needed over RIIO-ET3 to drive the TOs to further reduce harmful emissions from SF6 electrical equipment already in use. We propose the TOs set out, as part of their EAPs, a SF6 reduction strategy. We consider this should include improved monitoring, containment, asset management practices, as well as innovation on economical ways to remove SF6 from the network at scale, eg retrofill solutions that replace SF6 with an environmentally friendlier alternative without having to replace or significantly modifying the existing equipment.

ETQ10. What are your views on our minded-to proposal of retaining the IIG ODI-F during RIIO-ET3, and our additional commentary around the incentive and its associated reporting requirements?

Visual amenity PCD and re-opener

2.107 The high voltage grid infrastructure in GB is primarily comprised of overhead lines, supported on steel towers, and substations which connect generation and demand and interconnect the whole power system. The prominent nature of the ET network infrastructure can impact visual amenity and these effects can be spread across a wide area because of the linear nature of the overhead lines.

2.108 Some stakeholders are concerned about the negative visual impacts of new and existing electricity transmission infrastructure on the landscape and the effect of this infrastructure on the socio-economic well-being of local communities.

RIIO-ET2 background

Funding design

2.109 RIIO-ET2's visual amenity mechanisms support mitigation projects that reduce the visual impacts of existing infrastructure in National Parks, Areas of Outstanding Natural Beauty, and National Scenic Areas.

2.110 We set an expenditure cap of £465m in 2018/19 prices for all the TOs' RIIO-ET2 mitigation projects, which included a £7.5m use it or lose it (UIOLI) allowance per TO for projects that utilise landscaping and environmental enhancement to mitigate visual impacts of existing infrastructure. This cap was set using the costs

of potential pipeline projects identified in the TO Business Plans that have an affordable impact on energy bills and visual impacts of high importance.

2.111 The TOs can propose mitigation projects under the Visual Impact Mitigation re-opener if it has a policy in place to work with stakeholders on the selection of projects in their transmission area.[24] If we approve the re-opener request, we set a PCD and a funding allowance for the TO to deliver the project.

2.112 As part of the EAP, TOs must report yearly on the removal of overhead lines and non-technical mitigation projects per annum.

TO performance

2.113 The TOs are currently on track to underspend their visual amenity allowances by less than 10% across RIIO-ET2 and as far as we are aware all projects are progressing to plan. In November, we published a consultation on the first re-opener request for a visual impact mitigation project in RIIO-ET2.[25]

Visual amenity considerations for RIIO-ET3

New projects

2.114 Consistent with RIIO-ET1 and RIIO-ET2 we propose to retain a policy position that RIIO-ET3 should enable transmission companies to efficiently address a new ET project's impact, including visual amenity, as necessary to obtain planning consent.

2.115 We adopted this policy position because it is consistent with:

- the TOs' obligations under the Electricity Act 1989 to develop and maintain an efficient, coordinated, and economical system of electricity transmission; and
- the National Policy Statement for Electricity Networks Infrastructure that each project should be assessed individually based on its specific circumstances, and to balance the visual, environmental, and other impacts of grid infrastructure, along with the overall cost.

Existing projects

2.116 We are considering whether we should retain the scheme to mitigate the visual impact of pre-existing transmission infrastructure in designated areas.

[24] The re-opener is set out in Electricity Transmission Licence Special Condition 3.10 (Visual Impact Mitigation Re-opener and PCD and Enhancing Pre-existing Infrastructure Projects allowance (VIMREt and EPIt))
[25] Consultation on National Grid Electricity Transmission (NGET) North Wessex Downs – Visual Impact Mitigation Re-Opener | Ofgem

2.117 In principle we are supportive of such works, as evidenced by our proactive support during previous price controls. If we decide to retain a scheme to mitigate the visual impact of pre-existing ET infrastructure in designated areas we would want to see updated analysis from the TOs that there is consumer willingness to pay for additional projects in RIIO-ET3. We propose that this analysis should be submitted alongside TO Business Plans in late 2024, which should also evidence how the TOs have meaningfully taken the views and priorities of local communities into account in reaching their visual mitigation proposals. We consider that this updated analysis would be vital to see in the context of already rising energy bills across GB, and large amounts of network investment that consumers will need to fund on the ET network during RIIO-ET3 and beyond.

2.118 If we retain this funding scheme, we propose to retain our RIIO-ET2 approach to setting a cap on expenditure of using the costs of potential pipeline projects identified in the TOs' Business Plans that have an affordable impact on energy bills and visual impacts of high importance.

2.119 In addition to concerns around consumer willingness to pay, we note the high volume of work that the TOs will need to undertake during RIIO-ET3 against a backdrop of a constrained supply chain. We recognise that large capital projects to address the visual impacts of existing infrastructure rely on the same expertise and resources that are also needed for delivering new projects critical to the net zero transition. We welcome stakeholders' views on the potential risk of exacerbating supply chain issues, and if so, how it could be mitigated.

ETQ11. What are your views on retaining funding to support mitigation projects that reduce the visual impacts of existing infrastructure in designated areas?

Bespoke environmental outputs in RIIO-ET2

2.120 In addition to environmental outputs and obligations described in this chapter and the Overview Document, in RIIO-ET2 we also set specific bespoke environmental outputs specific to particular TOs. These are described in the table below, along with a brief assessment of whether or not we consider they should be taken forward into RIIO-ET3.

Table 7: Assessment of bespoke environmental outputs in RIIO-ET2

TO	Output	Description	Ofgem views for RIIO-ET3
SPT	Maximising environmental benefit from non-operational land ODI-R	Incentivises SPT to make land available at non-operational sites for community groups to install community generation projects and deliver biodiversity enhancements.	We consider that there is merit in encouraging all the TOs to do this, so will work to incorporate it into the AER in RIIO-ET3.
SPT	Enhanced environmental requirements UIOLI	Funds SPT to deliver no biodiversity net loss on major network projects included in its baseline, and to remediate contaminated land that is found during RIIO-ET2.	We intend to keep this funding under consideration. We want to work with SPT to understand what it has delivered in RIIO-ET2, and work with the other TOs on whether they could deliver something similar in RIIO-ET3.
SPT	Net Zero Fund UIOLI	Funds SPT to assist consumers and communities in vulnerable situations to build its capacity to address their energy issues, engage with the low carbon transition and contribute to the UK's net zero targets.	We intend to keep this funding under consideration. We want to work with SPT to understand what it has delivered in RIIO-ET2, and work with the other TOs on whether they could deliver something similar in RIIO-ET3.
NGET	SF6 Asset Intervention PCD and re-opener	Holds NGET to account for the funding of a large-scale intervention programme for badly leaking assets containing SF6. The programme aims to reduce the direct network emissions of SF6 over RIIO-ET2.	Given the significant volume of SF6 assets on NGET's network, and the volume of new build expected in the next 10 years, we consider that this PCD may be needed in RIIO-ET3 but will consider its use alongside our wider considerations in relation to SF6, set out earlier in this chapter.

TO	Output	Description	Ofgem views for RIIO-ET3
NGET	Net Zero Carbon Construction UIOLI	Funds NGET to deliver net zero carbon emissions on capital construction projects.	We intend to keep this funding under consideration. We want to work with NGET to understand what it has delivered in RIIO-ET2, and work with the other TOs on whether they could deliver something similar in RIIO-ET3.
NGET	Reducing carbon emissions from operational transport PCD	Holds NGET to account to deliver the volume of Electric Vehicles (EVs) and associated charging infrastructure it has been funded for during RIIO-ET2.	We expect that NGET will deliver the outputs set out in this PCD during RIIO-ET2 and as such will not require a PCD similar to this in RIIO-ET3.

ETQ12. Do you agree with our assessment of the bespoke outputs described in Table 7?

3. Secure and resilient supplies

Introduction

3.1 Network companies need to deliver a safe and resilient network that is also efficient and responsive to change. This chapter should be read in parallel with Chapter 6 of the Overview Document which describes our proposed RIIO-3 approach to:

- the Network Asset Risk Metric (NARM);
- physical security;
- cyber security; and
- climate resilience.

3.2 This package of measures reflects the importance of maintaining safety and reliability against a backdrop of significant changes in how the energy system operates.

3.3 In this chapter, we focus on the sector specific challenges of ensuring that the TOs comply with safety legislation and plan and manage outages efficiently in cooperation with the ESO.

Compliance with safety legislation

3.4 In RIIO-ET1 we introduced a safety output in respect of the requirement to comply with Health and Safety Executive (HSE) safety legislation. This reflected the fact that the TOs are required to design and operate their networks to ensure the safety of the public and their employees. HSE, further to applicable legislation, monitors and enforces performance in this area.

3.5 We are proposing to retain the RIIO-ET2 approach to safety. Our view is that it is not appropriate for us to attach additional outputs to safety given existing HSE legislation requiring the TOs to design and operate their networks to ensure the safety of the public and their employees.

ETQ13. Do you agree that we should retain the RIIO-ET2 approach to safety, or do you consider there is anything more we could do?

Network Access Policy (NAP) LO

Background

3.6 The TOs own and maintain assets on the electricity transmission network, whereas the ESO operates the entire system. The ESO and TOs have inherently different responsibilities but share a common goal to ensure the electricity system is functioning as needed. Therefore, they must coordinate their activities to fulfil both sets of responsibilities and meet their common goal.

3.7 The ESO incurs costs when it takes actions to resolve constraints that arise where there is insufficient capacity on the transmission system. These costs are ultimately passed on to consumers. The ESO is incentivised to reduce these constraint costs.

3.8 Constraint costs are affected by the availability of the ET network. When the TO replaces elements of the system or connects new infrastructure to the transmission system, parts of the network are required to be temporarily switched out. Switching out parts of the network is referred to as an 'outage', and therefore reduces availability of the network. Planning and undertaking outages will require coordination and/or notification of both demand side connections (mainly DNOs) and generators as they may be directly or indirectly impacted by an outage.

3.9 The ESO is incentivised to minimise constraint costs, while the TOs currently have no direct incentive to do so as part of their price control. In addition, they may even incur additional costs to accommodate the ESO's preferred outage plan (to reduce constraint costs).

3.10 The NAP is designed to facilitate efficient performance and effective liaison between the ESO and the TOs in relation to the planning, management and operation of the National Electricity Transmission System (NETS) for the benefit of consumers. The requirement to publish and act consistently with the NAP is set out in Special Licence Condition 9.2 of the ET licence. The NAP sets out the commitment by the TOs to effectively communicate and coordinate (as far as possible) outage planning and to identify ways in which TO actions can help the ESO minimise constraint costs. This sits alongside the TOs' statutory obligations to operate an economic, efficient and coordinated system.

3.11 Failure to comply with the NAP agreed at the start of the price control period constitutes a breach of the licence, which could trigger enforcement action, including a financial penalty. The scale of any such penalty would reflect the

potential harm to consumers, and in assessing this harm, we would give particular attention to the potential for non-compliance to lead to higher constraint costs. This could include analysis of the additional constraint costs that can be reasonably attributed to the specific breach of the network availability policy.

NAP consideration for RIIO-ET3

3.12 Our initial view is that the NAP plays a key role in ensuring a coordinated approach to network planning. Therefore, we are proposing to retain the NAP as a LO for RIIO-ET3 but are seeking views on any potential updates it may require, particularly in the context of the large volume of new network build expected during RIIO-ET3.

ETQ14. Do you agree with our proposal to retain the NAP for RIIO-ET3, and do you have any views on if and how it should be updated?

4. High quality of service from regulated firms

4.1 We expect network companies to deliver high quality services that meet the needs of consumers and network users and enable the transition to net zero.

4.2 We are considering ways in which we can continue to drive positive behaviours in the service they provide by setting stretching targets for the TOs and embedding performance improvements achieved in RIIO-ET2 as business as usual (BAU) for RIIO-ET3. We are also considering ways in which we can better accommodate the future needs of the energy system and ensure that incentives align with developments in the industry, including the changing role of the FSO, and the new CSNP.

4.3 In this chapter, we set out our approach to quality of service incentives for RIIO-ET3, which:

- drive improvements in reliability;
- support information sharing and proactive cooperation between the TOs and ESO;
- improve customer connection outcomes; and
- improve general customer service.

4.4 This includes a review of the performance and future usage of four financial incentives included within RIIO-ET2. These are The Energy Not Supplied (ENS) Incentive, the Timely Connections Incentive, the Quality of Connections Survey (QoCS) Incentive, and the SO:TO Coordination Incentive.

Energy Not Supplied (ENS) ODI-F

4.5 The most valuable service a network company can provide is an uninterrupted supply of power or gas. Electricity is central to GB consumers' daily lives. As a growing number of consumers utilise electric vehicles for mobility and employers continue to offer flexible workplace arrangements, our society and economy is increasingly dependent on a secure and reliable supply of electricity.

4.6 Reliability has been a key focus for Ofgem, and price controls have included a range of measures to ensure network companies improve their performance.

4.7 In RIIO-2, we used outputs and incentives to drive reliability standards across all sectors. The ENS incentive drives the TOs to improve network reliability in an efficient way by managing short-term operational risk.

4.8 'Energy Not Supplied' refers to the volume of energy lost to consumers as a result of faults or failures on the network, not including "excluded" or "exceptional" events. The high-level voltage disruptions that occur in the context of the ET network, which supplies the electricity distribution networks and large industrial customers in GB, are considered high impact-low probability events.

4.9 Under the ENS incentive, the TOs are encouraged to reduce the volume and duration of loss of supply events and respond in a timely manner to outages when they do occur.

4.10 A key input into the ENS incentive rate (and the Interruptions Incentive Scheme (IIS) in RIIO-ED2), is the Value of Lost Load (VoLL). VoLL is a representation of the value that a customer places on security of supply.

4.11 This section sets out potential considerations for the proposed continuation of the ENS ODI in RIIO-ET3. Building on the success of the ENS incentive in RIIO-ET2, we also set out options for embedding these performance achievements into the incentive design.

ENS in RIIO-ET2

Incentive design

4.12 For RIIO-ET2 the ENS incentive was designed to encourage the TOs to prioritise and improve network reliability by reducing the number and duration of loss of supply events by managing shorter term operational risk and mitigation actions.

4.13 Each TO's annual volume of ENS ("incentivised loss of supply") is measured in megawatt hours (MWh), minus excluded and exceptional events. The TOs are measured against individual targets that are set at the beginning of the price control, using a blended weighted average of past ENS performance.

4.14 The TOs can receive either a reward or a penalty under the incentive. The size of the reward or penalty is based on whether actual ENS for a given year is above or below the set target level. The incentive value is calculated as the difference between actual ENS volume and the target, multiplied by VoLL[26] (with the TIM sharing factor applied). This links the size of the incentive to the value consumers place on security of supply.

[26] Equal to £21,000/MWh in 2018/19 prices.

TO performance

4.15 The first two years of ENS performance in RIIO-ET2 showed substantial improvements over performance in RIIO-ET1. To date, all three TOs have delivered high levels of transmission network reliability and sustained low levels of outages under the incentive.

4.16 In 2021-2022, the TOs on average performed 93% and 98% below baseline targets in 2021/22 and 2022/23, respectively. This is compared with an average outperformance of baseline targets by 84% over RIIO-ET1.

ENS considerations for RIIO-ET3

4.17 The ENS incentive has continued to drive positive behaviours and has encouraged the TOs to provide an increasingly reliable service. We are seeking views on whether to retain the incentive for RIIO-ET3 and what form the incentive should take. We propose that, if retained, ENS should remain a financial incentive given the increasingly costly nature of transmission disruptions.

4.18 We acknowledge the concern expressed by ET3 Policy Working Group participants that RIIO-ET3 could see a period of limited system access and a higher likelihood of outages resulting from network expansion and planned connection works.

4.19 However, we believe it is appropriate to consider whether it is necessary and in the best interest of the consumer to embed the observed improvements in performance into the incentive design. We discuss this more below.

Retaining ODI-F or minimum obligation

4.20 The TOs are consistently outperforming current targets by growing margins, suggesting that the incentive is rewarding performance which can no longer be considered as outstanding.

4.21 The introduction of more stretching target levels would encourage the TOs to find ways to further reduce ENS. However, this may come with increasing marginal costs, which need to be weighed against the benefits of improved service levels.

4.22 Alternatively, the ENS incentive could transition to a minimum obligation standard. The TOs have shown that they can consistently deliver high levels of performance for consumers. It may no longer be necessary to incentivise further improvements. Instead, a minimum standard may be a more appropriate approach to ensure positive consumer outcomes, which, given observed performance to date, could be considered BAU.

4.23 Whichever approach taken for RIIO-ET3 should be in the best interest of consumers and reflect our intention to incentivise the TOs to efficiently deliver operational improvements which mitigate the risk of loss of supply events.

ETQ15. Should we retain the ENS incentive as an ODI-F and strengthen performance targets, or transition to a minimum obligation standard?

Setting baseline targets

4.24 Should the ENS incentive remain, we are seeking views on how to best ensure consumer value and fairness under the RIIO-ET3 incentive design through strengthening or reforming targets.

4.25 There has been a consistent pattern of the TOs beating reliability targets by increasing margins, and it is necessary that we consider how to set cost-effective targets in a way that continues to incentivise reliability and risk mitigation for consumers while remaining achievable for the TOs in the context of network expansion.

4.26 To continue to incentivise network reliability performance at a level valued by consumers, we have considered transitioning from an absolute baseline target to a rolling baseline target.

4.27 Using rolling averages for a baseline target would take the previous years' performance under the incentive into account, which could result in more stretching targets that reflect the continued improvements. However, targets would also weaken if performance is lower-than-expected for a particular year, which risks perpetuating a cycle of poor performance.

4.28 For RIIO-ET3, we are also considering the possible benefit of adding an improvement factor to embed the step changes and improvements in asset management, and better reflect experience gained. An improvement factor would raise targets over time.

4.29 We also recognise that impending changes to the network could impact the TOs' risk profile and acknowledge the point raised at the ET3 Policy Working Group that targets could be naturally stretched given potential increased difficulty in maintaining the current level of network reliability.

ETQ16. Are either a rolling baseline target or the addition of an improvement factor appropriate changes to the incentive target calculation methodology given the increases in target outperformance?

Incentive Value

4.30 As a key input into the ENS incentive calculation, we consider that VoLL has been effective in reflecting consumer value placed on supply security. We, therefore, propose to retain VoLL as an input in the ENS incentive rate in RIIO-ET3.

4.31 The current estimate of VoLL is over 10 years old, and we anticipate that a new estimate could be available prior to the start of RIIO-ET3. This estimate could change significantly, given the increased levels of electricity dependence amongst GB consumers.

4.32 We are mindful that a change to the VoLL estimate could significantly alter the incentive value, and that an updated estimate being released shortly prior to the start of the next price control could create uncertainty for the TOs. However, we feel it is important to continue to prioritise the best interest of consumers and closely reflect the value placed on uninterrupted supply.

ETQ17. Would a change in the estimate of the VoLL impact TOs investment decisions, and should the incentive value methodology be updated if the VoLL is changed?

Definition of Excluded and Exceptional Events

4.33 There are specific excluded and exceptional events that result in outages, which are beyond network company control and therefore are not subject to a penalty under the ENS incentive. Under RIIO-ET2, excluded events refer to the following:

- any ENS to customers that have requested a lower standard of connection than that provided in the NETS Security and SQSS;
- any ENS resulting from a shortage of available generation;
- any ENS resulting from a de-energisation or disconnection of a user's equipment under an event of default as defined in the Connection and Use of System Code (CUSC);
- any ENS resulting from a user's request for disconnection in accordance with the Grid Code;[27]
- any ENS resulting from emergency de-energisation by a user as defined in the CUSC;

[27] The Grid Code | National Grid ESO

- any ENS resulting from an emergency de-energisation or disconnection of a user's equipment necessary to ensure compliance with the Electricity Safety, Quality and Continuity Regulations 2002, as amended from time to time, or otherwise to ensure public safety; and
- any event lasting less than or equal to three minutes.

4.34 Exceptional events are defined under Special Condition 1A and refer to an event or circumstance that is beyond the reasonable control of the licensee and which results in or causes electricity not to be supplied, which includes:

- a threat of war, war declared or undeclared, terrorist act, vandalism, fire (not related to weather), certain severe weather events, etc.[28]

4.35 In the first two years of RIIO-ET2, loss of supply events attributed to excluded and exceptional events have exceeded incentivised loss of supply events, meaning that there was a higher level of energy not supplied than was included in the incentive calculation. In year 1, specifically, exceptional events contributed to a loss of supply that was greater than the combined baseline targets of all three TOs.

4.36 For an event to be classified as exceptional, the TO must submit a claim evidencing that the loss of supply event was beyond their control. The value of individual exceptional events can be small, and the cost of evaluating the claim may exceed the value of the claim itself. We are considering the addition of a materiality threshold to prevent the submission of claims in these instances.

ETQ18. Are the current definitions for excluded and exceptional events sufficient, or should they be changed for RIIO-ET3?

ETQ19. Should Ofgem add a materiality threshold for exceptional events?

Monitoring Individual Circuit Availability

4.37 Under the current ENS incentive design, only grid disruptions that result in the loss of supply to consumers registers as an incentivised ENS event. However, substantial failures that threaten the integrity of the grid system supply, but do not result in widespread consumer outages, can appear to be minor incidents according to the current ENS metric.

4.38 These faults can be costly and force consumers to unknowingly bear considerable risk of supply failure. If these events are not visible under the ENS incentive, we

[28] The full definition of 'Exceptional Event' can be found under Special Condition 1A of NGET's licence.

risk inadvertently disincentivising grid maintenance to prevent these failures and will not fully capture reliability or grid weaknesses.

4.39 We are considering the introduction of mechanisms to provide a more accurate depiction of grid supply reliability, starting with a proposed change in reporting requirements for the ESO to provide data on circuit performance.

ETQ20. What are your views on our proposed change to the ENS reporting requirements?

ETQ21. Are there alternative modifications to the ENS incentive that will more effectively improve visibility of circuit availability across the grid?

Connections incentives

4.40 The provision of timely new connections to networks is a vital function of electricity network companies as we transition to a decentralised and decarbonised energy system.

4.41 There are two ODI-Fs in RIIO-ET2 designed to drive performance for TOs: the Timely Connections Incentive and the Quality of Connections Survey (QoCS) Incentive.

4.42 In recent years, unprecedented numbers of electricity network connection applications have created challenges across the whole system. Around half of contracted electricity distribution connections are now dependent on transmission reinforcements and new connection dates for ET connections are typically in the 2030s in many parts of the country.

4.43 Industry, Ofgem and the government are working together to progress short-term solutions and longer-term reforms to address the connections queue. Any changes to connections incentives will need to be considered alongside this work that we and government are driving forward, set out in November's CAP.[29] The CAP specifically commits us to undertake a review of connections incentives across the electricity sectors, which will directly inform any changes to RIIO-ET3 connections incentives.

[29] Connections Action Plan | The Department for Energy Security and Net Zero, Ofgem

4.44 The CAP introduces measures to reduce the number of speculative applications, better utilise existing network capacity, remove slow moving projects and reduce friction at the interface between electricity transmission and distribution.

4.45 We will continue to work with industry to ensure that customer and system needs are at the heart of these reforms and that the RIIO-ET3 incentives that support these outcomes are appropriate and effective.

4.46 We are concerned that TO performance on the RIIO-ET2 connections incentives appears to show positive TO performance with regards to connections, when in fact the connections queue is the longest it has ever been. As part our broader connections reform work, we will undertake a review of the adequacy of electricity networks' connections incentives and obligations. This may result in future recommendations that will inform fundamental change to the operation and structure of the RIIO-ET3 connections incentives, resulting in significant reform to the RIIO-ET2 Timely Connections Incentive and QoCS Incentive. Notwithstanding that concern, commentary on those two RIIO-ET2 incentives is set out below.

ETQ22. What are your views on the extent to which fundamental reform of the ET connections incentives is required, and how would you approach that reform?

Timely Connections Incentive Considerations for RIIO-ET3

4.47 A key component of the Timely Connections incentive is the efficiency of information sharing between the TOs and the ESO. Given the interconnectedness of the TOs, DNOs and FSO in the context of transmission connections, it is necessary to develop an incentive design that prioritises effective and timely information sharing between all entities.

4.48 In its current form, the Timely Connections incentive is focused on the processing of application volumes rather than the coordination of network offers. This is something we may look to change for RIIO-ET3 as part of our broader review of the adequacy of the connections incentives being taken forward as a result of the CAP.

ETQ23. Do you have views on how the Timely Connections incentive can be reformed, or replaced, to better capture the efficient coordination of network offers?

Timely Connections Incentive in RIIO-ET2

4.49 The Timely Connections incentive has been designed to encourage timely delivery of connection offers to applicants via the ESO for new connections to the transmission network.

4.50 To be considered timely under the incentives, offers must be made within three months minus 13-15 days from notification by the SO of receipt of an application for connection, per the licence requirement.[30] Performance is measured by calculating timely connection offers as a percentage of the total number of annual connection offers.

4.51 All three TOs are measured against the same target. The TOs are expected to adhere to the three-month offer period for 100% of connections offers, as we consider it is achievable and effective.

4.52 The incentive value is calculated by dividing the number of untimely offers by total offers, multiplied by 0.5% of ex ante base revenue. This incentive is penalty-only by design and has included a financial collar of 0.5% ex ante base revenue.

4.53 Performance in RIIO-ET2 to date has averaged slightly lower than RIIO-ET1, but the TOs are consistently maintaining high levels of timely connections offers under the incentive. We observe that untimely offers appear to be limited to select connection types.

Quality of Connections Survey (QoCS) Incentive in RIIO-ET2

4.54 The QoCS incentive was introduced in RIIO-ET2 and was designed to incentivise the TOs to improve the quality of service delivered to connections customers. Given the uncertainty associated with the introduction of a new incentive, this was a reward-only mechanism for year 1 of RIIO-ET2, which was amended to be reward and penalty from year 2 of the price control.

4.55 Under the incentive, the TOs can contract the services of survey providers of their choosing. Connections applicants across the ET networks are surveyed at the same common milestones throughout the application process.

[30] See Standard Licence Condition D4A (Obligations in relation to offers for connection etc), and Part 2, Para 4.8.1 Section D of the System Operator – Transmission Owner Code (STC).

4.56 Performance is measured in a 1-10 satisfaction scale, with a universal target of 7.7 out of 10. Rewards are capped at a score of 9/10 and there is a penalty score collar at 6.4/10.

4.57 The financial reward cap was set at 0.25% ex ante base revenue for year 1, which increased to 0.5% for years 2-5. The financial collar, following the introduction of the penalty mechanism in year 2, is set at 0.5% of ex ante base revenue.

4.58 QoCS performance in RIIO-ET2 has been generally positive to date; the TOs have mostly exceeded the performance target, apart from NGET in year 2.

QoCS Incentive considerations for RIIO-ET3

4.59 We have observed that participation is low across the common milestones at which applicants are surveyed, particularly toward the end of the connections process. Therefore, we are considering to what degree consumer satisfaction is adequately captured with the current survey method.

4.60 There is a potential risk of bias in consumer responses using the survey method, given the complexity of the connections process, and recognising that not all consumers may be fully acquainted with the grid system and respective roles of network entities. This will be a key consideration in our review of the connections incentives being taken forward as a result of the CAP.

ETQ24. Do you have views on how the QoCS incentive can be reformed, or replaced, to better capture the service that connections customers receive?

SO:TO ODI-F

4.61 The SO:TO incentive was introduced in RIIO-ET2 as a mechanism to encourage the TOs to proactively identify and propose enhanced services to the ESO to reduce constraints on the transmission system and the cost of operating the network, using existing industry procedure (STCP11-4).[31]

4.62 In line with the STCP11-4 procedure, the ESO assesses solutions put forward by the TOs and approves those considered to be cost-effective and that provide material consumer benefit through the reduction of constraint costs.

[31] The System Operator Transmission Owner Code (STC) is a suite of code documents that define the relationship between the TOs and the ESO. The STCP11-4 procedure is one of the STC documents and was designed to enable the ESO to buy a service from the TOs that help to reduce the costs of operating the GB ET network. A copy of the STCP11-4 procedure is available on the ESO's website, here.

4.63 The below section on CSNP coordination sets out the expectation of cooperation and efficient information sharing between the TOs and the FSO. While the assessment of proposed solutions and respective cost saving calculations are currently under the remit of the ESO, we expect that these responsibilities will be transferred to the FSO in 2024.

4.64 The SO:TO incentive has been largely successful at delivering substantial benefit through consumer cost reduction. We anticipate that constraint costs are likely to continue to increase on the networks in coming years, and therefore are proposing retention of the incentive.

4.65 Below we set out potential considerations for options to increase the effectiveness of the SO:TO incentive, in a way that embeds the considerable performance achievements under the incentive and reflects experience gained from offering these enhanced services in RIIO-ET2.

SO:TO Incentive in RIIO-ET2

Incentive design

4.66 The SO:TO incentive is a reward-only incentive, initially operated under a 2-year trial period, which we this year decided to extend for the remainder of RIIO-ET2.[32]

4.67 For the trial period, performance was measured by ESO ex ante forecasted constraint cost savings. The incentive value was set at 10% of the forecasted cost savings and included individual financial caps on each TO's available reward equivalent to 1% of the respective 2018/19 constraint costs attributable to each TO network.

4.68 The extension announced this year was accompanied by the following changes to the incentive mechanism, including to the performance measures and financial cap:

- performance is now measured as a 50:50 weighting of forecasted and outturn constraint cost savings. In the trial period, the ESO forecasted constraint cost savings were consistently higher than the actual constraint cost savings. After soliciting stakeholder views, we decided to move to this blended reward methodology for the remainder of ET2;

[32] RIIO-2 System Operator: Transmission Owner Optimisation ODI June 2023 Decision

- the incentive value remains at 10% of constraint cost savings, using the 50:50 blended methodology.
- the significant success of the incentive at delivering consumer benefits through the adoption of proposed enhanced services contributed to the decision to remove the financial cap in the interest of incentivising continued innovation. It was determined that the consumer benefit was still proportional to the reward potential, given the 90:10 sharing factor;
- an additional mechanism will be introduced to protect against windfall gains in the case that outturn constraint cost savings are higher than forecast. Per our November 2023 consultation on the proposed licence modification, rewards will be capped using the lesser of either 10% of the blended constraint cost or 10% of the forecast constraint cost; and
- annual reporting for the SO:TO incentive will be included in the annual Regulatory Reporting Pack (RRP) cycle.

TO performance

4.69 The SO:TO incentive has been largely successful in encouraging the TOs to find opportunities to reduce network operating costs through the delivery of enhanced services.

4.70 In year 1 of the trial, the TOs delivered 11 enhanced services for a net consumer benefit of £32.6 million. Year 2 of the trial delivered 38 enhanced services across the networks, for a combined net consumer benefit of £268 million.

4.71 Examples of enhanced services provided under the trial period include:

- development of dynamic weather-based ratings on loaded overhead line routes;
- installing monitoring equipment to calculate real-time operating temperature and allowable circuit capacity; and
- raising settings on protection equipment to give enhanced ratings.

SO:TO considerations for RIIO-ET3

4.72 Given the success of the mechanism in mitigating network constraints and adding substantial levels of consumer benefit through constraint cost savings, we propose to retain the incentive for RIIO-ET3 with some modifications.

Refining BAU Activities

4.73 The incentive mechanism, both pre- and post-trial period, is designed to mitigate risk on the TOs to encourage the pursuit of innovative solutions. This includes fine-tuning of operational procedures once the TOs have gained additional experience and improved monitoring mechanisms through offering certain types of enhanced services.

4.74 These "off-the-shelf enhancements" include adopted enhanced services that were previously delivered and are again being utilised in subsequent years to reduce constraint costs. We expect that, generally, the delivery of off-the-shelf enhancements will not incur any additional risk or include any new innovation. If so, these activities can be considered BAU.

ETQ25. What activities should be considered business as usual under the SO:TO incentive?

The SO:TO incentive value

4.75 We consider that under the CSNP, the FSO's visibility into constraint management will likely increase and the difference between forecast and outturn constraint cost savings could decrease.

4.76 However, as this is yet to come into effect, we propose to retain the incentive value to be based on blended constraint cost savings, with the 90:10 sharing factor, and to include the current windfall gain protection mechanism.

4.77 We note that performance data for the current incentive design post-trial period is not yet available at the time of publication of this consultation. It is possible that upon review of performance data under the existing mechanism, other recommendations of potential modifications may be made.

ETQ26. What are your views on our proposal to retain the blended constraint cost savings, the 90:10 sharing factor, and the current windfall gain protection mechanism?

Wider SO:TO - CSNP interactions

4.78 We recognise a potential risk for the SO:TO incentive rewards to be earned in-lieu of interventions that would fit more appropriately under CSNP planning. The ESO/FSO could use enhanced services repeatedly to address recurring electricity network problems, instead of recommending permanent network reinforcements that would be more efficient and reliable in the long run. We want to understand

how likely, or if there are any scenarios, where this risk may arise, and how we can mitigate it.

4.79 We generally believe the risk is low because:

- the SO:TO incentive's timeframe reduces this risk. The ESO may identify and contract an enhanced service up to two years before it is needed. However, as network constraints are hard to predict accurately the enhanced service requirement may not always materialise. As set out in 4.75, we expect the FSO ability to forecast constraints to improve over time; and
- some RIIO-2 enhanced services, like dynamic lines ratings, may be RIIO-3 standard services. The FSO can ask TOs to install or monitor them as transmission services funded by the price control. This is captured in the annual CSNP process, which is specifically looking at how to address residual constraints and operational issues while new reinforcements are in progress.

ETQ27. We welcome your feedback on the SO:TO incentive scheme, and how we can ensure that it aligns with the long-term CSNP network planning and investments.

New Infrastructure Stakeholder Engagement Survey ODI-R

4.80 We expect network companies to deliver high quality services that meet customer and stakeholder needs. We use a combination of customer and stakeholder surveys across the sectors and a measure of complaints in distribution sectors to measure network companies' performance.

4.81 In RIIO-ET2, the TOs are encouraged to survey stakeholders impacted by new infrastructure projects on their stakeholder engagement experience, driving companies to tailor engagement to better meet the needs of local stakeholders impacted by transmission networks.

4.82 Ahead of RIIO-ET3, we propose to work with the TOs through the relevant working groups in the methodology phase to review the impact of reputational incentives on their behaviour.

ETQ28. What are your views on whether and how TO customer service performance should be incentivised or enforced during RIIO-ET3, over and above the incentives and obligations described elsewhere in this chapter?

CSNP Coordination

4.83 This section should be read alongside Chapter 2 (roles and responsibilities) of our Decision on the Future System Operator's Centralised Strategic Network Plan. Our decision requires the FSO to make and share a guide on what information is needed, from TOs or third parties, for the development of high-level design of CSNP options. This CSNP guidance is expected to be followed consistently by all TOs, third parties and the FSO when developing options.

4.84 The development of high-level options is a critical process for the development of the CSNP and requires enhanced coordination, cooperation, and liaison between the FSO and the TOs.

4.85 The TOs will be expected to play a crucial role providing appraisals of all CSNP solutions (developed by the FSO, the TOs or third parties), to verify the efficacy and efficiency of proposed solutions, and to determine whether solutions meet SQSS requirements.

4.86 We seek views on the most effective way to facilitate collaboration between the FSO and the TOs that ensures the timely delivery of recommended network investments.

4.87 Taking into account the range of regulatory mechanisms set out in Chapter 6 of the Overview Document (eg LOs or incentives), and non-regulatory mechanisms (eg industry codes), we welcome views on how to enhance the collaboration, coordination, and data sharing between the FSO and the TOs.

ETQ29. What is the most effective way of ensuring collaboration between the FSO and the TOs, to ensure the delivery of high-level design of CSNP options?

ETQ30. Do you agree that there should be a licence obligation on the TOs to engage and collaborate effectively with the FSO to ensure the delivery of the CSNP?

5. Cost of service

5.1 It is important to ensure that the transition to net zero comes at low cost for existing and future consumers. To this aim, we expect TOs to deliver services as efficiently as possible. In this context, the assessment of the efficient level of costs that will enable network companies to carry out their activities and deliver an appropriate level of outputs for consumers is clearly a core element of price control setting. As highlighted in the Framework Decision, we will consider the following principles for cost assessment:

- incentivising cost efficiency, which in the context of future energy systems may mean 'best value' to consumers over the long term;
- enabling net zero and investment needed to deliver this, including avoiding foreclosing pathways;
- ensuring robust, fair cost assessment frameworks;
- simplification and effort efficiency – reducing preparation, assessment and/or administrative requirements where possible without sacrificing on delivery or efficiency and focussing regulatory effort on areas of most importance (strategic, £ value or other);
- avoiding the creation of unintended, perverse incentives; and
- transparency in cost assessment methods and process.

5.2 For RIIO-3, the regulatory framework (including cost assessment) needs to reflect a balance between ensuring consumers get a fair deal now and in the future (by incentivising efficient, well-justified expenditure) and enabling the rapid pace and extent of change and investment needed to deliver net zero (by setting a funding framework that provides both certainty and adaptability). In this context, from a cost assessment perspective, finding the right equilibrium between ex ante allowances and UMs will be crucial.

5.3 We established a number of working groups with network companies and other stakeholders to aid in shaping the regulatory framework. The Cost Assessment Working Group (CAWG) is the main forum at which we discuss our potential approach to cost assessment for RIIO-ET3. We will continue to hold these CAWGs in the coming months to facilitate ongoing dialogue, transparency and development of our approach. Full details of all RIIO-ET3 working groups, including agenda and minutes will be published on our website.

5.4 While the overall approach to cost assessment for major projects and related other LRE is covered in Chapter 2, this chapter focuses more on the methodological tools for the assessment, which apply to all ET cost categories. Cross-sector aspects such as Real Price Effects (RPEs) and ongoing efficiency are discussed in the Overview Document. Specifically, in the remainder of this chapter we:

- briefly summarise our approach to assessing costs in RIIO-ET2 and discuss our current thinking on how to evolve the approach for RIIO-ET3;
- outline some of our proposals regarding ET-specific Business Plan Data Templates; and
- set out our next steps.

Evolving the RIIO-ET2 approach to cost assessment for RIIO-ET3

5.5 Cost assessment in both RIIO-ET1 and RIIO-ET2 used a toolkit approach to determine a view of efficient costs for TOs. The range of assessment tools included:

- quantitative methods such as regression analysis, unit cost analysis, ratio benchmarking and historical trend analysis; and
- qualitative methods such as project- and scheme-level needs based engineering reviews.

5.6 In RIIO-ET2, we used these tools to assess load and non-load capex, non-operational capex, network operating costs, indirect costs and other costs. A summary of the assessment approach to each of these categories is provided in Table 8 below. Regardless of the methodology used, when selecting key cost drivers we were guided by some underlying principles. Specifically, we decided that a good cost driver should:

- make economic and/or engineering sense;
- be accurately and consistently measurable and quantifiable;
- have a relatively stable relationship with costs over time;
- be beyond the control of the network company; and
- promote long-term efficiency (rather than, for example, current network condition).

Table 8: Summary of RIIO-ET2 cost assessment.

Cost Type	**Cost Area**	**Methodology**
Capex	Load Related Capex	Review of needs case, followed by efficiency analysis of asset costs (via unit cost benchmarking whenever feasible and engineering review), other related costs (case-by-case assessment) and risk and contingency costs (qualitative and bespoke assessment). Due to issues with reported data, a different approach was taken for SHET/SPT (more reliance on comparative cost assessment) vs. NGET (more holistic assessment).
Capex	Non-Load Related Capex	Review of needs case, followed by efficiency analysis of asset costs (via unit cost benchmarking whenever feasible and engineering review), other related costs (case-by-case assessment) and risk and contingency costs (qualitative and bespoke assessment). Due to issues with reported data, a different approach was taken for SHET/SPT (more reliance on comparative cost assessment) vs. NGET (more holistic assessment).
Capex	Non-operational capex	Property and Small tools, equipment, plant and machinery: historical run rates and ratio benchmarking, supplemented by Engineering Justification Papers (EJPs). Vehicles and Transport: historical trend analysis and volume assessment. Information Technology and Telecoms (IT&T): expert review.
Opex	Network Operating Costs (NOCs)	Unit cost benchmarking when both historical and forecast volumes available, average annual cost approach when either historical or forecast volumes unavailable. Relied on EJPs information when neither of the approaches could be applied.
Opex	Business Support	Econometric benchmarking used for the most part, with Insurance and IT&T costs subject to expert review or separately assessed.
Opex	CAI	Econometric benchmarking used for the most part, with Operational Training and Operational IT&T costs subject to expert review or separately assessed.
Other costs	Physical and Cyber Security	Physical Security: same approach as non-load related capex except the needs case for new sites (approved by government). Cyber Security: separately assessed.

5.7 As part of the Framework Decision, we decided to refine the current cost assessment process for RIIO-ET3. By doing this, we consider that we can explore opportunities to simplify the process and reduce regulatory burden while still incentivising cost efficiency.

5.8 Specifically, our proposal for RIIO-ET3 is to:

- continue using a toolkit approach to cost assessment;
- assume the same principles of a good cost driver as in RIIO-ET2; and
- keep the same (macro) cost categories for the assessment.

5.9 At the same time, we propose to engage with TOs and other stakeholders to identify as early as possible any developments in the sector occurring prior to, or expected to occur during the RIIO-ET3 period that might pose challenges to using the RIIO-ET2 cost assessment toolkit as is. We welcome views on whether and how the existing cost assessment tools need to adapt to the changing environment.

5.10 For example, we noted in our Framework Decision that funding for major new network investments will use the CSNP as the needs case to support those funding requests. However, we accept that there will be network investment through 'shared drivers' schemes and other anticipatory investment that will not necessarily be captured under the tCSNP2 and subsequent CSNP.

5.11 The cost assessment process will need to account for these interlinkages and the presence of multiple drivers to investments. As part of this, we intend to review our reporting suite to ensure that it reflects the holistic package of works required to deliver 'shared drivers' schemes.

5.12 Our early engagement in late 2023 with TOs through the CAWG also highlighted broader challenges with cost assessment. These include:

- treatment of cost volatility beyond those currently captured under RPEs; and
- cost categories for reporting scheme level data.

5.13 We recognise the extreme market volatility over the recent years stemming from macroeconomic events may have implications for supply chains and subsequent costs faced by TOs. Overall, we will review whether these variances can be adequately defined and addressed via the existing RPE mechanism, or, as suggested by some TOs, whether more reliance on forecast data compared to RIIO-ET2 could be appropriate. This is an area we may look to refine for RIIO-ET3, as for cost assessment purposes it is particularly important to understand early on whether historical data is a good predictor of the future.

5.14 On cost reporting, TOs flagged through the late 2023 CAWGs the need for data requests more in line with cost assessment methodologies and expected outputs.

They also noted inconsistency of cost reporting across TOs as one of the major blockers to robust cost assessment.[33]

5.15 Cost reporting has undergone significant development through the RIIO-ET2 BPDTs process and the following setting of the RRPs and they have been utilised to provide material insights into reported costs. We propose to build on this progress for the development of Business Plan Data Templates (BPDTs) for RIIO-ET3 to improve on reporting consistency, as well as continue our engagement with the TOs to identify potential opportunities for change or refinements to current reporting. The next section provides a high-level description of the process for the development of BPDTs.

5.16 We welcome stakeholder views on any challenges that have been identified with our cost assessment approach and toolkit used within RIIO-ET2.

Previous engagement

5.17 The process of evolving the RIIO-ET2 approach for application to RIIO-ET3 commenced well in advance of this consultation. A series of CAWGs focused on submission and assessment approaches for indirect costs, Modern Equivalent Asset Value (MEAV) and network operating costs (NOCs) have been held with network companies since early 2022. The aim of these working groups has been to evaluate the approach taken in RIIO-ET2 and identify ways in which data submissions and their reliability can be improved to increase our reliance on costs produced by the modelling methods employed.

5.18 For indirect costs, discussions have centred around use of historical cost data, appropriateness of cost drivers used in the past, and what exclusions and/or adjustments should be made going forward.[34] At the indirects-specific CAWG the TOs raised that some of the cost drivers, exclusions and adjustments we made when setting the RIIO-ET2 price control may no longer be appropriate for RIIO-ET3 due to the changing landscape in the sector. They also suggested a review of our approach to data disaggregation and clarification of cost definitions to reduce ambiguity and increase quality of cost submissions. The TOs have worked with us to identify historical adjustments that we made to costs in RIIO-ET2 and apply these to forecast costs for RIIO-ET3 to understand this further. This exercise

[33] For example, inconsistent reporting between SHET/SPT and NGET resulted in limiting the scope for benchmarking when assessing load and non-load related capex in RIIO-ET2.
[34] These are costs that we add, remove or change in a TO's submission to ensure that we compare all companies on a like-for-like basis.

identified that while on the whole historical exclusions and adjustments remain relevant, there may be merit in reviewing the way we assess these in future.

5.19 In the CAWGs focussed on indirects, the TOs also emphasised that changing investment solution development approaches and the changing characteristics of expenditure going forward could influence whether it is still appropriate for us to use historical data for modelling purposes as we have in the past. We will continue to discuss the use of historical data with TOs through upcoming working groups.

5.20 The appropriateness of using historical data for the analysis was also relevant to discussions that we had regarding MEAV as a cost driver of indirect costs and whether it is able to reflect the ongoing scale and pace of change needed in the sector. The TOs suggested that MEAV is a lagging indicator of scale, recognising asset increases only after the point of energisation, not when capex is incurred. During the MEAV-specific working groups, it was suggested that using different asset classification could be a simpler way to estimate MEAV. Alongside the principles of a good cost driver that we have identified above, the merits and requirements to use a supplementary asset classification approach were also discussed. The group agreed the following:

- asset data could/should reflect full network base and verifiable against asset movement tables;
- standard unit costs could reflect civils and protection and control assets within generic high-level asset classification;
- standard unit costs should be at a high enough level to protect commercial confidentiality; and
- there is potentially a need to give weighting to account for regional factors across TOs.

5.21 While we have discussed MEAV alternatives during our working groups held to date, we intend to do further work and have further engagement with TOs and stakeholders to identify whether MEAV is still the most appropriate cost driver in line with the principles of a good cost driver we have outlined above.

5.22 More generally, we consider the ongoing review of the assessment approach to indirects also relevant to the future development of the opex escalator. The opex escalator is a volume driver implemented in RIIO-2 to ensure TOs are funded through an automatic mechanism for varying operational costs associated with capital investments delivered through UMs. The regression model used for Closely

Associated Indirects and estimated on historical data was the starting point to determine the opex escalator parameter (ie the percentage increase in indirect costs following a 1% capex increase). The opex escalator also included an uplift to NOCs of 0.5% of the £m RAV addition arising from the new asset of specific load related UMs at the point of energisation.

5.23 We discuss aspects of the opex escalator mechanism in the Overview Document. Here, we propose to continue to review the methodology used to derive the parameters of the opex escalator, as well as work with TOs to ensure higher data quality underlying the analysis. We welcome stakeholders' views on how changes to the assessment approach to indirects can feed into the opex escalator methodology.

5.24 For NOCs, discussions in working groups were primarily related to whether the activities and drivers behind expenditure remain the same moving from RIIO-ET2 to RIIO-ET3 for comparison and reporting purposes and what measures of effectiveness were appropriate in assuring consumer value for such activities. We have engaged with the TOs regarding the inspections and maintenance, faults, vegetation management and legal and safety cost categories. The TOs have suggested that some areas, such as civil asset maintenance, or other activities with limited historical data may need further consideration to find appropriate data collection and assessment methods for RIIO-ET3. While these discussions have primarily been held to discuss current reporting requirements in the RRPs, we consider that the points raised are relevant to our development of the BPDTs for RIIO-ET3 and will therefore continue to discuss and develop new approaches with the TOs where needed.

ETQ31. Do you have any views on how the cost assessment methods used in RIIO-ET2 for load and non-load capex could be improved and/or simplified for RIIO-ET3? Do you think we should consider alternative and/or supplementary approaches to the assessment? If so, which?

ETQ32. Linked to ETQ30, do you have any views on how the cost assessment process could be adapted to capture multiple drivers and address the needs of evolving cost categories for 'shared drivers' schemes?

ETQ33. Do you have any views on how the cost assessment methods used in RIIO-ET2 for non-operational capex could be improved and/or simplified for RIIO-ET3? Do you think we should consider alternative and/or supplementary approaches to the assessment? If so, which?

ETQ34. Do you have any views on how the cost assessment methods used in RIIO-ET2 for network operating costs could be improved and/or simplified for RIIO-

ET3? Do you think we should consider alternative and/or supplementary approaches to the assessment? If so, which?

ETQ35. Do you have any views on how the cost assessment methods used in RIIO-ET2 for indirect costs could be improved and/or simplified for RIIO-ET3? Do you think we should consider alternative and/or supplementary approaches to the assessment? If so, which?

ETQ36. Do you have any views on how the cost assessment methods used in RIIO-ET2 for other costs could be improved and/or simplified for RIIO-ET3? Do you think we should consider alternative and/or supplementary approaches to the assessment? If so, which?

ETQ37. Do you have any views on how to evolve MEAV as a scale driver for RIIO-ET3? What other scale drivers could we consider?

ETQ38. Do you have any views on how the cost assessment process could address the market volatility and supply chain challenges that the sector is facing?

Uncertainty mechanisms in RIIO-ET2

5.25 In RIIO-ET2, where there was significant uncertainty in either the cost or volumes of work across the price control period, we introduced UMs. The cost assessment process we used supported the design of those UMs, helping identify the relevant drivers and parameter values. Most outputs and UMs implemented in RIIO-ET2 are discussed in previous chapters or in the Overview Document. For completeness, Table 9 below provides an overview of those not covered elsewhere in this document or the Overview Document.

Table 9: RIIO-ET2 UMs not covered in previous chapters and initial proposals for RIIO-ET3.

UM Type (TO)	**Description**	**Initial proposals for RIIO-ET3**
Re-opener (All TOs)	**Access and Charging Reform re-opener -** enables us to reduce totex allowances if changes to industry codes arising from our access and forward-looking charges Significant Code Review (SCR) lead to a reduction in network costs.	We propose that this re-opener will not be required in RIIO-ET3 because the access SCR was finalised in 2022. However, we will keep options for a similar re-opener under consideration in the event of future changes to the charging regime.
Re-opener (All TOs)	**Medium Sized Investment Projects (MSIP) -** to ensure that TOs are able to undertake necessary investments in the transmission network, funding for which has not been provided in RIIO baseline allowances.	We propose to review the need for this re-opener beyond RIIO-ET2, as it is likely to overlap significantly with proposals in Chapter 2 of this document.

UM Type (TO)	**Description**	**Initial proposals for RIIO-ET3**
PCD (All TOs)	**Wider Works** - to manage the uncertainty associated with large load related reinforcement schemes derived from the ESO Network Options Assessment process.	We propose to review the need for this PCD beyond RIIO-ET2, as it is likely to overlap significantly with proposals in Chapter 2 of this document.
Volume Driver (NGET)	**Incremental Wider Works** - to ensure NGET is funded through an automatic mechanism to undertake required incremental wider works investments.	We propose to review the need for this PCD beyond RIIO-ET2, as it is likely to overlap significantly with proposals in Chapter 2 of this document.
PCD (NGET)	**Overhead Line Conductor Replacement** - to ensure allowances are adjusted down if NGET does not deliver in full the replacement of Aluminium Steel Core Reinforced Core Greased Conductors and Aluminium Composite Core Conductor.	We expect this type of investment to be needed in RIIO-ET3, which would justify retaining this PCD unless the information received through Business Plan submissions will be of sufficient quality. Nonetheless, we intend to review the PCD approach for RIIO-ET3 compared to alternative options such as consolidation with other PCDs or re-openers to reduce regulatory burden.
PCD (NGET)	**Protection and Control** - to ensure allowances are adjusted down if NGET does not deliver in full certain Protection and Control works.	We expect this type of investment to be needed in RIIO-ET3, which would justify retaining this PCD unless the information received through Business Plan submissions will be of sufficient quality. Nonetheless, we intend to review the PCD approach for RIIO-ET3 compared to alternative options such as consolidation with other PCDs or re-openers to reduce regulatory burden.
PCD (NGET)	**Switchgear Other (Bays)** - to ensure allowances are adjusted down if NGET does not deliver in full the intervention of switchgear other (bay) assets.	We expect this type of investment to be needed in RIIO-ET3, which would justify retaining this PCD unless the information received through Business Plan submissions will be of sufficient quality. Nonetheless, we intend to review the PCD approach for RIIO-ET3 compared to alternative options such as consolidation with other PCDs or re-openers to reduce regulatory burden.
PCD (NGET)	**Instrument Transformers** - to ensure allowances are adjusted down if NGET does not deliver in full the replacement of	We expect this type of investment to be needed in RIIO-ET3, which would justify retaining this PCD unless the

UM Type (TO)	Description	Initial proposals for RIIO-ET3
	instrument transformers based on the following drivers: PCB-filles, Dissolved Gas Analysis condition, SF6 leakage and asset family issues.	information received through Business Plan submissions will be of sufficient quality. Nonetheless, we intend to review the PCD approach for RIIO-ET3 compared to alternative options such as consolidation with other PCDs or re-openers to reduce regulatory burden.
PCD (SHET, SPT)	**Resilience and Operability** - to specify investments proposed by SPT to ensure network resilience and operability.	We intend to review the PCD in the context of the overall resilience package.
PCD (NGET)	**Bengeworth Road GSP Project** - to provide funding for works at Bengeworth Road following confirmation of need.	We intend to remove this PCD, as the specified work is expected to be completed in RIIO-ET2.
Re-opener (SPT)	**Uncertain Non-Load Related Projects** - to ensure appropriate funding for six non-load related projects with a large degree of uncertainty over their timing and solution.	We intend to remove this UM, as the specified work is expected to be completed in RIIO-ET2.
UIOLI (NGET)	**Substation Auxiliary Interventions** - to ensure any unused funding for replacing NGET's Standby Diesel Generators and LVAC Boards is returned to consumers.	We intend to review the need for this uncertainty mechanism for RIIO-ET3.
Re-opener (NGET)	**Optel Fibre Wrap** - for NGET to present and seek funding for carrying out the replacement of Optel fibre wrap based on a well-developed new solution and condition assessment information.	We intend to remove this uncertainty mechanism for RIIO-ET3, as we expect NGET will carry out initial work in RIIO-ET2 and that costs submitted for RIIO-ET3 will be well justified so to remove the need for a re-opener.
Re-opener (NGET)	**Substation Civil Works** - to allow NGET to seek funding for a range of civil works in their substations.	We are minded to remove this UM for RIIO-ET3, as we expect NGET to submit well-justified costs that will remove the need for a re-opener.
Re-opener (NGET)	**Towers and Foundations** - to allow NGET to seek funding for a range of steel and foundation works on Overhead Lines routes.	We are minded to remove this uncertainty mechanism for RIIO-ET3, as we expect NGET to submit well-justified costs that will remove the need for a re-opener.
Re-opener (NGET)	**Tyne Crossing** - to provide funding for works to removed the Tyne Crossing and replace it with a suitable alternative.	We intend to remove this uncertainty mechanism for RIIO-ET3, as work is expected to be completed in RIIO-ET2.
Re-opener (SHET)	**Subsea Cable Repairs** - to enable SHET to seek funding for efficient costs	We consider this re-opener will still be needed for high-cost, low

UM Type (TO)	Description	Initial proposals for RIIO-ET3
	associated with resolving unexpected subsea cable faults, or for mitigating the risk of these faults occurring.	probability subsea cable events in RIIO-ET3.
Pass-through (All TOs)	**Temporarily Physical Disconnection Costs**	We intend to continue to treat these costs as pass-through.
Pass-through (SHET)	**Energy Not Supplied Compensatory Scheme** - to provide payments to customers who experience interrupted power supply due to lower standard design of network in some parts of SHET's transmission area	We intend to continue to treat these costs as pass-through.
PCD (NGET)	**Generation Related Infrastructure** - to provide funding for connection of a power station	We propose to review the need for this PCD beyond RIIO-ET2, as it is likely to overlap significantly with proposals in Chapter 2 of this document.
PCD (SHET, SPT)	**Shared Schemes** - to manage uncertainty with LRE works which include significant non-load related elements or other external interfaces	We propose to review the need for this PCD beyond RIIO-ET2, as it is likely to overlap significantly with proposals in Chapter 2 of this document.
Volume Driver (SHET)	**Legacy Baseline Connections**	We propose to review the need for this volume driver beyond RIIO-ET2, as it is likely to overlap significantly with proposals in Chapter 2 of this document.

5.26 We welcome stakeholders' views on which RIIO-ET2 UMs could be evolved for RIIO-ET3, how they could be evolved, or whether they could be removed. We particularly welcome views on whether these UMs are still applicable to RIIO-ET3 or, although useful in RIIO-ET2, they are unlikely to bring value to consumers in the next price control because, for example, some of the uncertainties that justified the implementation are no longer relevant for RIIO-ET3.

ETQ39. Do you have any views on our initial thinking around the role and potential evolution in RIIO-ET3 of the UMs listed in Table 9?

ET Business Plan Data Templates

5.27 As highlighted in the Overview Document, we will develop Business Plan Guidance, EJP Guidance and Cost Benefit Analysis (CBA) Guidance to ensure consistent and streamlined submission of Business Plans for RIIO-ET3. Alongside, we will develop the BPDTs and associated instructions that will enable data

collection from TOs. In this section, we set out some of our initial views about the development of BPDTs specific to the ET sector. The Business Plans should include historical and forecast values, if applicable.

Approach

5.28 We propose that both the RIIO-ET2 BPDTs and the RIIO-ET2 RRPs should form the basis of the data templates for RIIO-ET3. From this baseline, we propose to work with TOs over the next months to develop draft RIIO-ET3 BPDTs and associated instructions. We aim to issue BPDTs alongside Business Plan Guidance in spring 2024 (with draft versions shared beforehand), ahead of network companies' Draft BPDTs submissions in summer 2024. We reserve the right to revise BPDTs to reflect any changes we consider appropriate in light of the summer Draft BPDTs submissions.

5.29 As highlighted in paragraphs 5.15 and 5.24, we are working with TOs to identify and resolve inconsistencies in reporting between RIIO-ET2 BPDTs and RIIO-ET2 RRPs. We will continue to work with TOs to add further clarification in reporting requirements and format, when necessary, to improve consistency for the BPDTs and more generally to mitigate the risk of lack of compliance in reporting. This reporting guidance will be reflected in the BPDTs instructions.

BPDTs content

5.30 We expect to ask for similar data in the RIIO-ET3 BPTDs as we collect annually in RIIO-ET2 RRPs and as we collected in RIIO-ET2 BPDTs. Some areas and features we will be reviewing that potentially could be subject to change are:

- data that helps inform policy, for example to enable us to assess costs associated with proposed PCDs to determine output targets;
- data that helps inform how we develop our cost assessment approach;
- data that helps capture cost drivers suitable for our cost assessment approach, including for 'shared drivers' schemes where a more holistic approach to reporting might be warranted;
- where we think the context or the level of uncertainty has changed from RIIO-ET2 to RIIO-ET3 with consequences for the data required to assess costs;
- the BPDTs format that will adapt reporting requirements while improving our cost analysis process and aligning with best practices; and
- clearer or simplified reporting requirements in selected categories, if it will improve our cost assessment approach, for example on NARM.

5.31 Moreover, a guide to the key principles for CBA will be presented in the cross-sector Business Plan Guidance. However, we also expect to develop these on a sector-specific basis through the stakeholder engagement process.

ETQ40. We invite views on current reporting requirements and structure at the cost category level and how this may be adapted to better suit RIIO-ET3 and related development of BPDTs.

Next steps

5.32 We will continue holding CAWGs in 2024. Details of these meetings and how to engage will be shared with stakeholders. We will use the working groups to help us develop our approach to RIIO-ET3 cost assessment. We invite stakeholders to propose alternative models to us in this time.

5.33 We will not decide on our final approach to RIIO-ET3 assessment of efficient costs until after we have received final Business Plan submissions in December 2024, as Business Plan evidence may warrant a different approach.

Appendix 1 - Privacy notice on consultations

Personal data

The following explains your rights and gives you the information you are entitled to under the General Data Protection Regulation (GDPR).

Note that this section only refers to your personal data (your name address and anything that could be used to identify you personally) not the content of your response to the consultation.

1. The identity of the controller and contact details of our Data Protection Officer

The Gas and Electricity Markets Authority is the controller, (for ease of reference, "Ofgem"). The Data Protection Officer can be contacted at dpo@ofgem.gov.uk

2. Why we are collecting your personal data

Your personal data is being collected as an essential part of the consultation process, so that we can contact you regarding your response and for statistical purposes. We may also use it to contact you about related matters.

3. Our legal basis for processing your personal data

As a public authority, the GDPR makes provision for Ofgem to process personal data as necessary for the effective performance of a task carried out in the public interest, ie a consultation.

4. With whom we will be sharing your personal data

We will not share your personal data with any person or organisation.

5. For how long we will keep your personal data, or criteria used to determine the retention period.

Your data will be held for 12 months after the end of the project.

6. Your rights

The data we are collecting is your personal data, and you have considerable say over what happens to it. You have the right to:

- know how we use your personal data;
- access your personal data;
- have personal data corrected if it is inaccurate or incomplete;
- ask us to delete personal data when we no longer need it;

- ask us to restrict how we process your data;
- get your data from us and re-use it across other services;
- object to certain ways we use your data ;
- be safeguarded against risks where decisions based on your data are taken entirely automatically;
- tell us if we can share your information with 3rd parties;
- tell us your preferred frequency, content and format of our communications with you; and
- to lodge a complaint with the independent Information Commissioner (ICO) if you think we are not handling your data fairly or in accordance with the law. You can contact the ICO at https://ico.org.uk/, or telephone 0303 123 1113.

7. Your personal data will not be sent overseas

8. Your personal data will not be used for any automated decision making.

9. Your personal data will be stored in a secure government IT system.

10. More information For more information on how Ofgem processes your data, click on the link to our "Ofgem privacy promise".

Appendix 2 Consultation Questions

Delivery of major new projects

ETQ1. What are your views on the materiality threshold that should be set to determine which projects fall into or out of our proposed major projects regime?

ETQ2. What are your views on our proposed approach to setting PCF and ECF, the scope of PCF and ECF and continuing the 'operational aspects' introduced under ASTI?

ETQ3. What are your views on options for how the ITA could be implemented for major new ET3 investments, and what are your views on its role and scope?

ETQ4. What are your views on introducing a delivery incentive into RIIO-ET3 for major projects that is broadly similar to the ASTI ODI-F? Do you consider that delivery should be more strongly incentivised than under ASTI, and if so how?

ETQ5. What are our views on our proposed cost assessment approach for major new RIIO-ET3 projects?

ETQ6. What are your views on our proposed treatment of sub-£100m schemes identified by the CSNP?

Load related expenditure outside of the CSNP

ETQ7. What are your views on our proposal for load-related expenditure outside of the CSNP, how these mechanisms can be improved and streamlined, and the appropriate thresholds for the mechanisms?

ETQ8. What are your views on our proposal for 'shared drivers' projects, how TOs need to evidence investment requirements and how they can be held to account for delivery?

ETQ9. What are your views on our proposal that there is a need for generation and demand connections volume drivers in RIIO-ET3, and how, if at all, they should change relative to those used in RIIO-ET2?

Minimising networks' impact on the environment

ETQ10. What are your views on our minded-to proposal of retaining the IIG ODI-F during RIIO-ET3, and our additional commentary around the incentive and its associated reporting requirements?

ETQ11. What are your views on retaining funding to support mitigation projects that reduce the visual impacts of existing infrastructure in designated areas?

ETQ12. Do you agree with our assessment of the bespoke outputs described in Table 7?

Introduction

Compliance with safety legislation

ETQ13. Do you agree that we should retain the RIIO-ET2 approach to safety, or do you consider there is anything more we could do?

Network Access Policy (NAP) LO

ETQ14. Do you agree with our proposal to retain the NAP for RIIO-ET3, and do you have any views on if and how it should be updated?

Energy Not Supplied (ENS) ODI-F

ETQ15. Should we retain the ENS incentive as an ODI-F and strengthen performance targets, or transition to a minimum obligation standard?

ETQ16. Are either a rolling baseline target or the addition of an improvement factor appropriate changes to the incentive target calculation methodology given the increases in target outperformance?

ETQ17. Would a change in the estimate of the VoLL impact TOs investment decisions, and should the incentive value methodology be updated if the VoLL is changed?

ETQ18. Are the current definitions for excluded and exceptional events sufficient, or should they be changed for RIIO-ET3?

ETQ19. Should Ofgem add a materiality threshold for exceptional events?

ETQ20. What are your views on our proposed change to the ENS reporting requirements?

ETQ21. Are there alternative modifications to the ENS incentive that will more effectively improve visibility of circuit availability across the grid?

Connections incentives

ETQ22. What are your views on the extent to which fundamental reform of the ET connections incentives is required, and how would you approach that reform?

ETQ23. Do you have views on how the Timely Connections incentive can be reformed, or replaced, to better capture the efficient coordination of network offers?

ETQ24. Do you have views on how the QoCS incentive can be reformed, or replaced, to better capture the service that connections customers receive?

SO:TO ODI-F

ETQ25. What activities should be considered business as usual under the SO:TO incentive?

ETQ26. What are your views on our proposal to retain the blended constraint cost savings, the 90:10 sharing factor, and the current windfall gain protection mechanism?

ETQ27. We welcome your feedback on the SO:TO incentive scheme, and how we can ensure that it aligns with the long-term CSNP network planning and investments.

New Infrastructure Stakeholder Engagement Survey ODI-R

ETQ28. What are your views on whether and how TO customer service performance should be incentivised or enforced during RIIO-ET3, over and above the incentives and obligations described elsewhere in this chapter?

CSNP Coordination

ETQ29. What is the most effective way of ensuring collaboration between the FSO and the TOs, to ensure the delivery of high-level design of CSNP options?

ETQ30. Do you agree that there should be a licence obligation on the TOs to engage and collaborate effectively with the FSO to ensure the delivery of the CSNP?

Evolving the RIIO-ET2 approach to cost assessment for RIIO-ET3

ETQ31. Do you have any views on how the cost assessment methods used in RIIO-ET2 for load and non-load capex could be improved and/or simplified for RIIO-ET3? Do you think we should consider alternative and/or supplementary approaches to the assessment? If so, which?

ETQ32. Linked to ETQ30, do you have any views on how the cost assessment process could be adapted to capture multiple drivers and address the needs of evolving cost categories for 'shared drivers' schemes?

ETQ33. Do you have any views on how the cost assessment methods used in RIIO-ET2 for non-operational capex could be improved and/or simplified for RIIO-ET3? Do you think we should consider alternative and/or supplementary approaches to the assessment? If so, which?

ETQ34. Do you have any views on how the cost assessment methods used in RIIO-ET2 for network operating costs could be improved and/or simplified for RIIO-ET3? Do you think we should consider alternative and/or supplementary approaches to the assessment? If so, which?

ETQ35. Do you have any views on how the cost assessment methods used in RIIO-ET2 for indirect costs could be improved and/or simplified for RIIO-ET3? Do you think we should consider alternative and/or supplementary approaches to the assessment? If so, which?

ETQ36. Do you have any views on how the cost assessment methods used in RIIO-ET2 for other costs could be improved and/or simplified for RIIO-ET3? Do you think we should consider alternative and/or supplementary approaches to the assessment? If so, which?

ETQ37. Do you have any views on how to evolve MEAV as a scale driver for RIIO-ET3? What other scale drivers could we consider?

ETQ38. Do you have any views on how the cost assessment process could address the market volatility and supply chain challenges that the sector is facing?

ETQ39. Do you have any views on our initial thinking around the role and potential evolution in RIIO-ET3 of the UMs listed in Table 9?

ET Business Plan Data Templates

ETQ40. We invite views on current reporting requirements and structure at the cost category level and how this may be adapted to better suit RIIO-ET3 and related development of BPDTs.