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Consultation

RIIO-ED2 Draft Determinations – Overview Document	
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The next electricity distribution price control (RIIO-ED2) will cover the five-year period to 31 March 2028. In December 2021 the Distribution Network Operators (DNOs) submitted their Business Plans to Ofgem setting out proposed expenditure for RIIO-ED2. We have now assessed these plans and this document, and others published alongside it, set out our Draft Determinations proposals for DNO allowances under the RIIO-ED2 price control for consultation.

The full suite of Draft Determinations documents 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 before confirming our Final Determinations. 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.

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Contents

1. Introduction

Purpose of this document

1.1 This document sets out our Draft Determinations for the next electricity distribution network price control (RIIO-ED2) for the key strategic areas that are common to all Distribution Network Operators (DNOs). The RIIO-ED2 price control covers the five-year period from 1 April 2023 to 31 March 2028. All figures are in 2020/21 prices unless otherwise stated.

1.2 In preparing these Draft Determinations we have duly considered all stakeholder feedback from each phase of the RIIO-ED2 programme, which commenced with the publication of an Open Letter in August 2019.[1]

1.3 The proposals set out reflect all previous feedback provided from the DNOs and other stakeholders, including the representations and reports from the enhanced stakeholder engagement programme, including from the RIIO-ED2 Challenge Group and the individual DNO Customer Engagement Groups (CEGs). Further details on our approach to embedding the consumer voice in RIIO-ED2 is set out in the RIIO-ED2 Draft Determinations Core Methodology Document.

Navigating the RIIO-ED2 Draft Determinations documents

1.4 This document sets out a high-level overview of our Draft Determinations proposals. It sets the strategic context for the RIIO-ED2 price control and key interdependencies with wider regulatory programmes aimed at facilitating an energy system fit for net zero. It also describes:

- our proposed approach to setting key quality of service outputs and incentives for RIIO-ED2
- our proposed approach for ensuring efficient cost of service to consumers, summarising our cost assessment framework and steps taken to ensure efficient financing

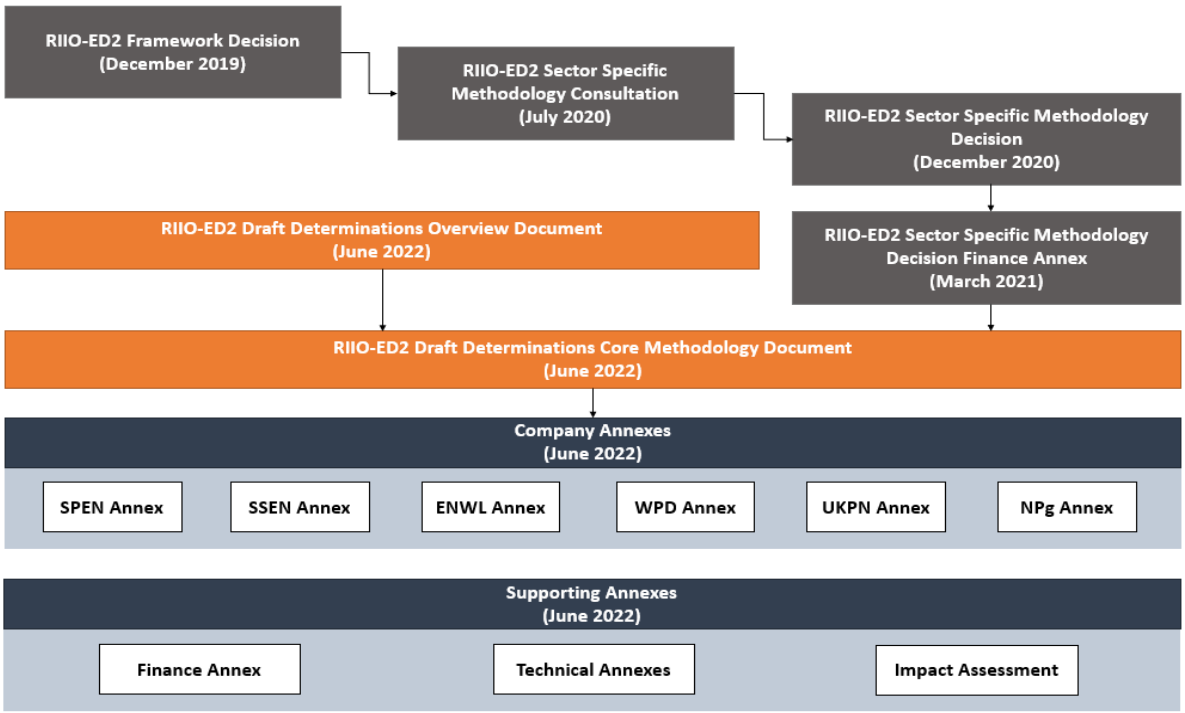
[1] Open Letter Consultation on the RIIO-ED2 Price Control | Ofgem

- how we propose to optimise the use of existing network capabilities and new investments, including in data and digital technologies, to support the transition to a net zero energy system.

1.5 This Overview Document should be read alongside the following Draft Determinations documents:

- Core Methodology Document – this sets out our detailed Draft Determinations positions on the quality of service and cost of service proposals common to all DNOs
- Finance Annex – this contains our Draft Determinations proposals on the regulatory finance building blocks of RIIO-ED2. In general, these apply across all DNOs with company-specific considerations identified
- Company Annexes – these contain our Draft Determinations proposals specific to each individual DNO
- Impact Assessment – this sets out our assessment of the likely impact of these Draft Determinations proposals on consumers and the DNOs
- Technical Annexes – these include detail underpinning our Draft Determinations proposals including, where appropriate, consultancy reports relevant to specific topic areas. Each of these will be cross-referenced where applicable.

Figure 1 Navigating the RIIO-ED2 Draft Determinations documents



Consultation stages and next steps

1.6 This consultation on our Draft Determinations will run for 8 weeks and close on 25 August 2022. All proposals published as part of these documents are draft determinations, subject to consultation.

1.7 Following consideration of all stakeholder responses to this consultation we will confirm our Final Determinations for RIIO-ED2 by the end of this year. We will implement our Final Determinations by modifications to the companies' licence conditions, after further consultation on licence drafting.

How to respond

1.8 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.

1.9 We have asked for your feedback on a number of questions set out in this and the wider suite of RIIO-ED2 Draft Determinations documents. Please respond to each one as fully as you can.

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

2. Strategic context and overall package

2.1 Over the past 18 months global energy costs have risen substantially, first as demand levels across the world increased following the COVID-19 pandemic and then more recently after the events witnessed in Ukraine. These higher costs are ultimately paid for by consumers through their energy bills and clearly this is a difficult time for many households across the country.

2.2 This makes Ofgem's mission to protect the interests of consumers more important than ever - ensuring a secure supply of electricity and gas, and helping the country make the transition to a low carbon domestic energy system at least cost. What the energy system is seeking to enable is not only a transition away from an over reliance on fossil fuels to tackle climate change, but also a transition away from volatile prices to better protect consumers and their household bills.

2.3 Great Britain's local electricity distribution networks are essential in making this transition happen. These networks are the wires and cables that move power from where it is produced to homes and businesses across the country and ensure a reliable supply when it is needed.

2.4 Over the five-year period to 2028 DNOs will need to make the investments that will:

- help ensure the delivery of a GB-wide network to enable electric vehicle (EV) charging as we move away from petrol and diesel cars
- increase our grid capacity to power heat pumps (HPs) as we transition from gas boilers
- support an increase the number of small-scale renewables connecting directly to the distribution grids
- help make our power supplies more resilient to more frequent storms, such as those seen through last winter.

2.5 As DNOs make these investments, we also need to be ready to think differently about how we maximise the opportunities created through the transformation of the energy system. This includes how we insulate our homes, use energy more efficiently, and harness the power of new technologies.

2.6 A smarter, more flexible grid will give consumers more control to save money through access to better data and more regularly updated prices for peak and off-peak demand. It will also enable smart gadgets that draw energy from the grid at

cheaper rates when demand is low, supporting the rollout of low carbon technologies like EVs.

2.7 These changes will reduce the need for costly new generating and grid capacity and in the long-term could save customers up to £10 billion a year[2], helping keep bills down and achieving our climate change goals at the same time.

2.8 Ultimately, any investments made in the electricity grid will be paid for by consumers through their energy bills, and it is Ofgem's principal objective to protect the interests of consumers.

2.9 Given the extraordinary pressure on household bills, it is extremely important that our network companies can demonstrate value for money. In these Draft Determinations we have set out our proposals for a tough but fair settlement, providing strong challenge to the network companies to ensure their costs are justified and efficient while driving the right investment decisions for all consumers.

Summary of Draft Determinations proposals

2.10 In the lead up to COP26 in Glasgow last November the UK became one of the first major economies to commit to a net zero target by 2050.

2.11 In June 2021, the UK Government passed the Climate Change Committee's (CCC) Sixth Carbon Budget into law, with the aim to reduce emissions by 78% by 2035 compared to 1990 levels. This was followed by the publication of the British Energy Security Strategy in April this year which set out the steps that Government would take to enhance UK energy security and independence over the long term.[3]

2.12 Government policies to deliver these decarbonisation targets are also becoming clearer. This includes the commitment to a net zero power sector by 2035. On transport, there are clear targets to phase out new fossil-fuelled vehicles by 2030; and on heat there are clear incentives to ensure that all new homes and buildings are using low carbon heating by 2035. The Welsh Government has committed to achieving net zero emissions by 2050 and the Scottish Government has set a net

[2] Transitioning to a net zero energy system: Smart Systems and Flexibility Plan 2021 (publishing.service.gov.uk)
[3] https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy

zero trajectory to 2045. Regional and local authorities across the country also have their own decarbonisation ambitions.

2.13 Later this summer the Department for Business, Energy and Industrial Strategy (BEIS) and Ofgem will jointly publish the Electricity Networks Strategic Framework, setting out the framework for the transformation of the networks for a decarbonised electricity system. This will detail what we are doing to develop a policy and regulatory environment that ensures that the electricity network in Great Britain enables net zero and our continued energy security. It will also set out how this will be delivered in a way that provides value for money for consumers while ensuring a reliable supply of electricity throughout this transformation.

2.14 The Government's decarbonisation targets and ambitions will mean increased demand for electricity and significant expansion in low carbon generation. Achieving net zero across the energy system will require a significant increase in investment in new low carbon infrastructure to meet the increased demand for electricity, both on low carbon generation and on upgrading our electricity networks.

2.15 Delivering these ambitions at least cost to consumers and minimising the impact on energy bills also requires any new investment in new low carbon infrastructure to be delivered efficiently. This means making best use of existing network capacity and the various new smart and flexible technologies that are emerging, including through increased data and digitalisation of the sector, while ensuring any new investment is made in the right place, at the right time, and at the right price.

2.16 This summer, we will also publish our Net Zero Britain package, setting out Ofgem’s view on key aspects of Great Britain’s energy system where we consider major reform is required to deliver a resilient, low cost, low carbon power sector, as well as a proposed framework of consumer interests to help focus our actions. These changes could facilitate increased infrastructure investment in the right places, at the right times, and deliver a more efficient, flexible system design to meet increased electricity demand. The reforms could also improve cross-vector coordination within our energy systems.

2.17 The RIIO-ED2 price control is a critical part of this package. It will enable both the changes that are needed in the five-year period to 2028, but also put in place the building blocks for a smart, digitally enabled energy system of the future; and

enable a whole-system view of network planning which can inform and be informed by stakeholders on an ongoing basis. There are three key parts to this.

2.18 First, the proposals set out in these Draft Determinations recognise the transition already occurring across the energy system, and the need for the local distribution networks to maintain high levels of reliability while responding quickly and efficiently to changing requirements. This includes the new demands from EV uptake, changes arising from the move to low carbon heating, and new low carbon generation. Where network upgrades are required, our approach will also enable the least cost investment path. For example, ensuring reasonable steps to invest ahead of demand and future-proof the network where this benefits consumers and making full use of flexibility and other smart resources where those reduce costs.

2.19 Second, the design of the price control recognises that the future remains uncertain. Accordingly, various mechanisms are also proposed to ensure the price control can adapt quickly and effectively to changing demands, optimising efficiencies across the whole energy system and ensuring strong protections for consumers.

2.20 Third, these Draft Determinations proposals ensure the local distribution grids are preparing for the energy system of the future. This includes putting in place the technologies and processes to support a smarter, more flexible and digitally enabled energy system as well as enabling a whole-system view of network planning which can inform and be informed by stakeholders on an ongoing basis.

2.21 Our Draft Determinations proposals are summarised below.

Preparing the networks to deliver net zero

- An initial funding package of £20.9bn to operate, maintain and enhance the local grids and support the transition to net zero
- Baseline investment of £2.7bn in network upgrades to support the rollout of EVs, HPs and the connection of more local, low carbon generation including solar and wind
- An agile package of uncertainty mechanisms that will allow investment to adapt quicky to support higher volumes of low carbon technologies if networks are faced with sharper uptakes in demand for new connections
- Significant commitments to research and development of green energy through an extension of the Strategic Innovation Fund (SIF) to cover the electricity distribution companies and over £60m of additional allowances

(Network Innovation Allowances (NIA)) to support smaller scale innovation projects

- Funding the DNOs to undertake activities to decarbonise the electricity distribution networks and to reduce the wider impact of network activity on the environment. This includes efforts to reduce their business carbon footprint, mitigate environmental damage from fluid-filled cables and chemical compounds such as polychlorinated biphenyls, and gain a further understanding of embodied carbon and supply chain emissions.

Supporting a smarter, more flexible energy system

- A new framework of outputs and incentives for Distribution System Operation (DSO) with clearer executive level accountability for neutral decision-making between DSO and DNO business activities
- This includes a new DSO financial output delivery incentive (ODI-F) to drive DNOs to more efficiently develop and use their network, considering flexible and smart alternatives, to defer the need for reinforcement and ultimately reduce customer bills
- Funding to improve the DNOs' monitoring of their networks, including through the installation of network monitoring equipment and through improved use of data analytics
- New licence requirements for all DNOs to ensure that they communicate flexibility requirements for the future and the detailed information about the outcome of their procurement of flexibility services annually to Ofgem, to benefit those businesses able to respond.

Maintaining world class levels of reliability and customer service and speedy connections of low carbon technologies

- A strong package of financial and reputational incentives to drive behavioural changes across the areas that matter to consumers, with tough targets for any reward and the opportunity to apply penalties for poor performance
- This builds on existing incentives that have delivered performance improvements in the time it takes to connect minor connection customers to the network, customer service and network reliability - and introduces new incentives which aim to protect vulnerable consumers through the cost-of-living crisis, improve service delivery for major connections customers and enable a flexible low carbon transition

- A commitment to further explore what more can be done to speed up connections, including obligations on companies around the overall (ie end to end) time to connect
- An initial funding package of £5.2bn to ensure that key network assets are maintained, repaired, and replaced, with further funding to ensure that the networks remain resilient, including in relation to severe weather.

Delivering at lowest cost to energy consumers

- An average downward adjustment of 17% to the levels of baseline funding sought by the companies in their Business Plans, reflecting a strong efficiency challenge to them to do more with available resources
- Retaining an incentive regime that ensures companies can strive for efficiency but with a higher share of any costs saved to be shared with consumers
- An ongoing efficiency challenge of 1.2% per year, reflecting an overall increase in productivity that we expect even the most efficient companies to deliver
- Reducing the cost of equity allowance to 4.75% (Consumer Price Index Including Owner Occupiers' Housing Costs (UK) – CPIH) compared to 6% to 6.4% (Retail Price Index (RPI))[4] in the RIIO-ED1 control to better align with current market conditions
- Increased investment in network infrastructure for net zero supported without a corresponding increase in network charges on bills, reflecting these strong efficiency challenges and lowering of investor returns
- The introduction of an additional measure (the Return Adjustment Mechanism) to protect consumers and companies against significant deviations in performance.

Ensuring that no one is left behind in the energy transition

- Strong and targeted representation of the consumer voice at the heart of developing the RIIO-ED2 control through the enhanced engagement process, including public Open Hearings
- Funding to support the delivery of vulnerability strategies across all DNOs, including support during power interruptions, the delivery of advice and

[4] Equivalent to an average RIIO-ED1 Cost of Equity allowance for the slow-track DNOs of 6.7% in CPIH terms when we add a 0.7% RPI-CPIH wedge to an allowance of 6% in RPI terms.

services relating to fuel poverty, and targeted support to overcome barriers related to low carbon technologies

- Inclusion of a combination of stronger, enforceable Licence Obligations to hold DNOs accountable for delivering minimum standards of service and treating all customers fairly
- Introduction of a new consumer vulnerability incentive framework with stretching targets and common metrics to drive further improvements in services, including to Priority Services Register (PSR) customers
- A wider package of incentives in key customer priority areas including reliability, connections, and customer service.

Wider reforms to enable the energy system transition

2.22 These Draft Determinations come during a significant period of change across the energy system. This change is necessary to ensure that the scale of the UK's net zero ambitions can be delivered but also to implement this change efficiently so that the energy bills paid by consumers are kept as low as possible.

2.23 Achieving net zero at lowest cost requires that any new investment is delivered efficiently, maximising the full potential of demand-side response and enduring flexibility to minimise the need for expensive new infrastructure. This can be achieved through several ways:

- first, through energy efficiency to reduce overall energy demand and remove the need for unnecessary investment in generation and network infrastructure
- second, through shifting demand in time (for instance, through smart charging of electric cars) to reduce the peaks that would otherwise drive the need for peaking generation or network upgrades
- third, by harnessing flexible technologies such as storage and vehicle to grid supply of power that can help to balance the system and/or resolve local network congestion problems without the need for expensive new infrastructure.

2.24 This will require action across a range of areas including market design and operation, and the roles of data, digitisation and standardisation. To achieve this, we need an energy system that is planned holistically, both at the national and local level.

Effective system operation for net zero

2.25 As the energy system undergoes the unprecedented transition to net zero, it is imperative that key energy system functions are performed by institutions with the competence, appropriate skillset, and incentives to drive net zero at least cost, and that there is clear accountability and coordination in the delivery of these.

2.26 Earlier this year the UK Government and Ofgem set out the commitment[5] to proceed with the creation of a new, independent Future System Operator (FSO) as an expert, impartial body with the key responsibility of facilitating net zero while also maintaining a resilient, affordable system. This will include a role in coordinating and ensuring a whole systems approach to network planning, helping to deliver the strategic changes necessary for net zero more efficiently and effectively in the interests of consumers.

2.27 Similar opportunities also exist for reform of DSO at the local level and wider development around the role of local energy planning. This is particularly important in the context of growing local generation of power, the need for significant investment in local public charging infrastructure for EVs and the need to plan a transition for heat, which may well vary significantly from place to place.

2.28 In April Ofgem launched a Call for Input[6] looking into the institutional and governance arrangements at a local level. The purpose of this was to seek views from industry, local authorities, and other interested stakeholders on the effectiveness of arrangements in place to govern the local energy system and the changes that are needed to facilitate a cost-effective net zero transition.

2.29 Throughout the development of the RIIO-ED2 price control, we have been clear that governance arrangements must properly support the development of efficient planning and operation of the networks as well as coordinated flexibility markets. As part of this, we have also been clear that the optimisation of local energy systems could require new mechanisms and arrangements for DSO, including to manage potential conflicts of interest that arise from the system changes set out above.

2.30 As set out in the Call for Input, there are a range of possible future outcomes, some of which entail significant change from the present DNO/DSO approach. At

[5] Proposals for a Future System Operator role - GOV.UK Proposals for a Future System Operator role - GOV.UK (www.gov.uk)
[6] Call for Input: Future of local energy institutions and governance | Ofgem

the same time, we see a clear need to make rapid progress on effectively utilising flexibility and planning the local energy systems. We are therefore progressing both in parallel: our review to establish the institutional and governance arrangements that will best support cost effective net zero in the long term, and a more comprehensive regulatory framework to drive efficient DSO during RIIO-ED2.

2.31 For the RIIO-ED2 price control we have defined, standardised and set clear expectations of the DSO roles. DNOs will have clear obligations to fulfil standardised DSO roles, incentives on DSO performance and minimum requirements to embed clearer executive level accountability for neutral decision-making between their DSO and DNO business activities, and transparency checks, for example, external audits of decisions.

2.32 Achieving the potential benefits of DSO activities will require the full use of smart technologies to minimise cost, provide flexibility to the system, help to balance supply and demand and actively manage constraints on the network. In turn this will require increased data and digital capabilities and much greater network visibility at all voltage levels. In this document we refer to this as "smart optimisation" and further details on our approach are set out in Chapter 7.

2.33 The RIIO-ED2 price control and new data Licence Obligations will also deliver significant improvements in data availability, coordination and transparency by establishing common Data Best Practice guidance.

2.34 DSO activities will include a new network planning function, which will enable smart optimisation of network investments. Through this the DNOs will deliver a rollout of network monitoring on Low Voltage (LV) substations, the development of open data platforms for the sharing of network data, and enhanced decision-making through modern modelling techniques. We expect this to deliver a significant step forward in clarity and collaboration and the development of local flexibility markets.

2.35 In taking forward all these activities we expect DNOs to proactively identify and work to realise the benefits of consistent and standardised approaches, including engaging with Ofgem where appropriate to help future proof investments against the different potential futures for DSO.

Charging arrangements fit for net zero - the Access and Forward-looking charges Significant Code Review (SCR)

2.36 The Access and Forward-Looking Charges Significant Code Review (Access SCR) was launched in December 2018 to improve price signals for efficient use and development of the network. The objective of the review was to ensure that the electricity networks are used flexibly and efficiently, better reflecting users' needs and allowing customers to benefit from new technologies and services, while avoiding unnecessary costs through energy bills.

2.37 The Access SCR is a key part of the process to ensure that regulations governing how energy infrastructure is paid for remains fit for purpose.

2.38 Currently DNOs charge those requiring a new or upgraded connection to the network directly for upgrades to the grid that are needed to accommodate them. However, the current charging system has several drawbacks.

2.39 This includes the risk that businesses moving to lower carbon sources of power may be put off by the high upfront costs of upgrading their connection to the grid.

2.40 Additionally, the sheer scale of new connections that will be needed, for example, to charge up millions of EVs, requires a more strategic, efficient, and joined-up way of planning and paying for new connections to ensure costs are kept down for all customers.

2.41 In May we published our decision[7] to reform these charging arrangements. This will mean more of the costs of these new connections will be shared in a fair and proportionate way among all network users, making the likes of EV charging points and HPs, more accessible and affordable for individual customers.

2.42 The charging reforms are due to come into effect from April 2023, aligning with the start of the RIIO-ED2 price control.

2.43 Given the recent confirmation of this decision, the impacts of these changes were not reflected in the Business Plans submitted by the DNOs. Accordingly, any associated costs are not reflected in the baseline allowances that we have set out in these Draft Determinations.

[7] Access and Forward-Looking Charges Significant Code Review: Decision and Direction | Ofgem

2.44 We propose to work with the DNOs to fully understand the expected cost impact of these changes to baseline allowances and the design of appropriate uncertainty mechanisms and to reflect these in our Final Determinations to be made later this year. Further detail on our approach is provided in Chapter 12.

3. Quality of Service - setting outputs and incentives for RIIO-ED2

Introduction

3.1 Outputs and incentives are a key feature of the RIIO-ED2 framework. They are designed to drive companies to focus on delivering the objectives that matter to existing and future customers. This chapter sets out the package of outputs that we are proposing to apply in RIIO-ED2.

3.2 In our RIIO-ED2 Sector Specific Methodology Decision (SSMD), we established the RIIO-ED2 outputs framework. This included the three components of our outputs framework:

- Licence Obligations (LOs) set minimum standards that network companies must achieve
- Price Control Deliverables (PCDs) specify the deliverable(s) for the funding allocated, and the mechanism(s) to refund consumers in the event an output is not delivered (or not delivered to a specified standard)
- Output Delivery Incentives (ODIs) drive service improvement through reputational and financial incentives.

3.3 Outputs for RIIO-ED2 are grouped into three consumer-facing output categories:

- meeting the needs of consumers and network users
- maintaining a safe and resilient network
- delivering an environmentally sustainable network.

3.4 The outputs that we are proposing across our Draft Determinations are either common or bespoke. Common outputs apply to all DNOs. We use common outputs for areas of service quality that are relevant to all consumers in all regions of the electricity network. In contrast, bespoke outputs are specific to individual companies. These seek to reflect the needs of and feedback that companies received from their consumers and other stakeholders.

3.5 For RIIO-ED2, we are proposing to set challenging output targets on key service quality measures, ensuring the companies build on RIIO-ED1 performance levels, with more stretching targets to drive improvements in RIIO-ED2. We also propose to link a greater proportion of spending allowances to outputs that hold companies

to account for delivery, with mechanisms in place to return funding to consumers where work is not delivered, or not delivered to a specified level.

3.6 We have developed a suite of common quality of service incentives for RIIO-ED2 which consist of seven ODI-Fs, of which four are existing and three are new to RIIO-ED2.[8] Companies which deliver a high quality of service to their customers have the potential to earn financial rewards in return for their actions, while penalties act as a protection for consumers against poor performance.

3.7 The incentives we propose to retain from RIIO-ED1 have, in most cases, been proven to drive overall performance improvements in customer service delivery and network reliability. Where performance has improved, the RIIO-ED2 incentive package aims to embed those improvements achieved during RIIO-ED1 by re-calibrating targets within existing incentives. Where performance has not improved, we propose to challenge network companies to achieve standards that have been demonstrated elsewhere.

3.8 It is because of the overall improvement in performance delivered in RIIO-ED1 that we are proposing to reduce the cap on rewards for the Interruptions Incentive Scheme (IIS). We introduced a revenue cap under the IIS in RIIO-ED1 to manage the risk of DNOs earning excessive rewards that would be funded by customers. While we still held this view at our SSMD, we have continued to keep this under review. We need to trade off the benefit of additional reliability against the cost to customers to achieve it. We think that a proportionate approach to allow for further improvements while managing the risk of outperformance would be to reduce the revenue cap from its current level, while keeping the downside collar to protect DNOs from excessive penalties and protect consumers against potentially higher costs resulting from any deteriorations in performance. Further details on our proposals are provided in Chapter 6 of Core Methodology Document.

3.9 Our proposed suite of common ODI-Fs for RIIO-ED2 is the same as was proposed in our SSMD and outlined in Table 1 below.

[8] Two of these new ODI-Fs, the Stakeholder Engagement and Consumer Vulnerability incentive (SECV) and the Incentive on Connections Engagement (ICE), will be removed for RIIO-ED2. RIIO-ED2 Annex 1, Paragraphs 4.54 – 4.55, 5.87 -5.89 RIIO-ED2 Sector Specific Methodology Decision | Ofgem

Table 1 Common ODI-Fs proposed in RIIO-ED2

ODI-F name	Purpose	New or existing RIIO-ED1 incentive	Incentive Rate as % RoRE[9,10]
Customer Satisfaction Survey (CSS)	To encourage DNOs to improve the quality of customer service and reward exceptional performance	Existing	+0.40% / -0.40%
Complaints Metric (CM)	To ensure good performance from DNOs when handling complaints	Existing	0% / -0.20%
Time to Connect (TTC)	To incentivise DNOs to reduce the time it takes to connect minor connection customers to the network	Existing	+0.15% / -0.15%
Major Connections	To ensure DNOs provide quality service to major customers seeking to connect to the network	New	0% / -0.35%
Vulnerability	To incentivise the provision of appropriate support services to consumers in vulnerable situations	New	+0.20% / -0.20%
DSO	To drive DNOs to more efficiently develop and use their network, considering flexible and smart alternatives to network reinforcement	New	+0.20% / -0.20%

[9] Return on Regulatory Equity is the financial return achieved by shareholders in a licensee during a price control period from its actual performance under the price control.

[10] We set out our consultation position on the calibration of incentive caps and collars to RoRE in Chapter 10 of the Finance Annex.

ODI-F name	Purpose	New or existing RIIO-ED1 incentive	Incentive Rate as % RoRE[9,10]
Interruptions Incentive Scheme (IIS)	To incentivise DNOs to improve network reliability and reduce outages	Existing	+1.00% / -2.50%

3.10 Our proposals for all common outputs are set out in more detail in the Core Methodology Document, and bespoke outputs are set out in the relevant company annexes.

3.11 Table 2 outlines all RIIO-ED2 outputs, both common and bespoke, and sets out where you can find full details of their application.

Table 2 Outputs included in our Draft Determinations

Output name	Output Type	Companies applied to	Further detail
Common outputs for the ED sector			
Annual Environmental Report	ODI-R	All	Chapter 3, Core Methodology Document
DSO	ODI-F	All	Chapter 4 Core Methodology Document
Digitalisation Licence Obligation	LC	All	Chapter 4 Core Methodology Document
Technology Business Management (TBM) taxonomy for classifying digital/IT spend	ODI-R	All	Chapter 4 Core Methodology Document
Innovation project to modernise regulatory reporting	ODI-R	All	Chapter 4 Core Methodology Document
Customer Satisfaction Survey	ODI-F	All	Chapter 5, Core Methodology Document
Complaints Metric	ODI-F	All	Chapter 5, Core Methodology Document
Time to Connect	ODI-F	All	Chapter 5, Core Methodology Document

Output name	Output Type	Companies applied to	Further detail
Guaranteed standards of performance – Connections	Statutory instrument	All	Chapter 5, Core Methodology Document
Major Connections Incentive	ODI-F	All	Chapter 5, Core Methodology Document
Treating domestic customers fairly	LC	All	Chapter 5, Core Methodology Document
Consumer Vulnerability Incentive	ODI-F	All	Chapter 5, Core Methodology Document
Annual Vulnerability Report	ODI-R	All	Chapter 5, Core Methodology Document
Interruptions Incentive Scheme	ODI-F	All	Chapter 6, Core Methodology Document
Guaranteed standards of performance – Reliability	Statutory instrument	All	Chapter 6, Core Methodology Document
Network Asset Risk Metric	PCD, ODI-F	All	Chapter 6, Core Methodology Document
Cyber Resilience Information Technology	PCD	All	Chapter 6, Core Methodology Document and Confidential DNO annexes
Cyber Resilience Operational Technology	PCD	All	Chapter 6, Core Methodology Document and Confidential DNO annexes
Whole Systems Licence Obligation	LO	All	Chapter 4, Core Methodology Document
Bespoke outputs			
Smart Street	PCD	ENWL	Chapter 2, ENWL company annex
Dig, Fix and Go	ODI-F	ENWL	Chapter 2, ENWL company annex
Collaborative Streetworks	ODI-F	UKPN	Chapter 2, UKPN company annex

Output name	Output Type	Companies applied to	Further detail
EV Optioneering	PCD	SPEN	Chapter 2, SPEN company annex
Biodiversity	PCD	SPEN	Chapter 2, SPEN company annex
Network Loss Reduction	PCD	SPEN	Chapter 2, SPEN company annex
Borrowdale Transformers	ODI-R	ENWL	Chapter 2, ENWL company annex
Shetland	LO	SSEN	Chapter 2, SSEN company annex
Off-gas grid strategic investment	PCD	UKPN	Chapter 2, UKPN company annex

Price Control Deliverables

3.12 The DNOs requested in their Business Plans that we provide more information on how we would apply PCDs. In our SSMD,[11] we indicated that we would set PCDs for outputs that we directly fund through the price control and where the funding provided is not transferrable to a different output or project. We noted that we might also attach PCDs to projects that are funded during the price control via a re-opener.

3.13 PCDs are by their nature relatively bespoke and the ways in which they are set and assessed will vary accordingly. Generally, the outputs, allowances and delivery dates will be set up front. In some cases, allowances will be recovered automatically through a formula defined in the licence. We refer to these PCDs as mechanistic. For others, depending on the complexity of PCDs and their underlying projects, we propose to undertake ex post reviews to determine the delivery status and, where appropriate, the extent of associated claw back required. We refer to these PCDs as evaluative.

3.14 Our assessment may consider whether PCD outputs have been fully delivered, partially delivered, delivered late, or delivered to an equivalent specification. Where we have proposed to set PCDs, we have sought to set out the design

[11] RIIO-ED2 SSMD Annex 1, Paragraph 3.31 RIIO-ED2 Sector Specific Methodology Decision | Ofgem

features of the specific PCD within the relevant company annexes. The licence will specify each PCD and set out further detail on our assessment methodology. These licence conditions will also be supplemented by a guidance document.

Approach to setting outputs

Assessment approach for bespoke outputs

3.15 In our Business Plan Guidance (BPG), we invited companies to propose bespoke outputs (ODIs, PCDs, and LOs) in collaboration with their stakeholders and CEGs in their Business Plans.[12] We stated in that proposals should:

- reflect the network services that existing and future consumers/network users and/or wider stakeholders require
- be as complete as possible in capturing the activities and costs of the company in the relevant area
- be measurable and reportable
- allow comparison of performance across companies, where there is sufficient commonality
- capture the long-term nature of outputs, including how they will deliver, or facilitate the delivery of, benefits beyond the RIIO-ED2 price control period
- set stretching targets which are well-evidenced and deliver clear outcomes/outputs.

3.16 We received almost 100 proposals for bespoke outputs, which covered a wide range of themes from across the DNOs' Business Plans.

3.17 We reviewed the evidence that companies provided for each proposal and conducted an assessment against the criteria and additional points of justification set in the BPG.[13]

3.18 For our initial assessment, we gave RAG ratings against each of the criteria as well as an overall RAG assessment for the proposal. This assessment was peer-reviewed by another team member for each proposal. We rejected any proposals rated red at this stage. This included all proposals that were erroneously labelled

[12] RIIO-ED2 Business Plan Guidance, Paragraph 3.6 RIIO-ED2 Business Plan Guidance | Ofgem
[13] RIIO-ED2 Business Plan Guidance, Paragraph 3.6, 3.7 RIIO-ED2 Business Plan Guidance | Ofgem

by the companies as bespoke outputs but did not fall under one of the specified output categories (eg they were simply a corporate aim of the DNO).

3.19 For those proposals rated amber or green after our initial assessment, we performed a more detailed assessment against the criteria, including asking the DNOs supplementary questions. Where, following this more detailed assessment, we concluded that the justification did not satisfy the BPG criteria we have rejected the bespoke output proposal. Where the BPG conditions were satisfied, we took the following steps:

- we identified bespoke outputs for similar outputs proposed by the DNOs and considered whether it would be more appropriate for the output to be a common output. The outputs for which we consider this the case appear as new proposals for common outputs in the company annexes
- we considered whether alternative output types or uncertainty mechanisms would be more effective in achieving the proposal's objectives. Where this was the case, we have proposed an alternative mechanism instead
- we accepted bespoke output proposals in cases where a common output or alternative mechanism would not be as appropriate as the proposal submitted by the company.

3.20 We propose to allow seven bespoke outputs in RIIO-ED2. The complete set of bespoke output proposals for each company and our rationale for accepting or rejecting them is set out in each of the company annexes.

4. Ensuring efficient cost of service - setting baseline allowances

Introduction

4.1 In this chapter, we provide an overview of our decisions in setting RIIO-ED2 total expenditure (totex) allowances for all DNOs. Costs within this chapter do not include any costs driven by the Access SCR change. Details of the impact of the Access SCR review can found in Chapter 12 of this document.

4.2 Totex allowances are a material component of consumers' bills now and in the future given how the costs of investment are recovered over time, and it is important that consumer bills reflect efficient investment decisions and costs. Based on current estimates, the average GB consumer in 2021-22 will pay £91 per year (in real 2020/21 price terms) for electricity distribution costs in their energy bills.

4.3 Companies submitted Business Plans with varying low carbon technology (LCT) uptake assumptions impacting load related expenditure and with different approaches to managing and reporting uncertainty. To make the DNOs submitted costs more consistent and comparable for our benchmarking models, we have made several adjustments to some DNO submissions where there was a different interpretation taken for uncertainty mechanism reporting. These adjustments are linked to how each DNO forecast its Business Plan scenario costs and allocated them between its proposed baseline allowance requirements and its expectations of subsequent funding that would be realised from in-period uncertainty mechanisms. These adjustments had the effect of reclassifying some costs from uncertainty mechanisms to baseline, the net impact of which was to increase the companies submitted baseline total expenditure to £25.3bn from £24.9bn.[14] The rationale for this adjustment is set out in Chapter 7 of the Core Methodology Document.

4.4 To ensure efficient investment decisions and costs, we have set stretching efficiency targets and totex allowances based on well justified costs. We have also made provision for the use of uncertainty mechanisms, which may provide

[14] Costs presented here are total net submitted costs before non price control allocations. Non price control allocations are adjustments to allowances to account for income that sits outside the price control. For comparison purposes, the totex analysis undertaken by the RIIO-ED2 Challenge Group in their February 2022 report presented total submitted costs on a net basis after non price control allocations.

additional allowances, where future costs and needs are less certain and are likely to benefit from greater clarity in the future. We consider that our proposals allow companies to maintain high quality services for consumers and are flexible enough to adapt to the needs of the future energy system, while ensuring value for money for consumers.

4.5 As set out in our SSMD and building on our approach from RIIO-ED1 and the other RIIO-ED2 sectors, we have applied a broad toolkit approach to our cost assessment. We use this to build up a picture of whether a company is efficient. The approach makes good use of the rich information provided in the DNOs' Business Plans. We have made use of quantitative and qualitative assessment, DNOs' narrative and supporting evidence, historical costs and performance data and company forecasts.

4.6 The DNOs have submitted forecasts on net zero pathways/scenarios they think are most likely to arise, taking account of the alignment between regional and national targets. Our assessment of this information formed part of the qualitative assessment of Business Plans.

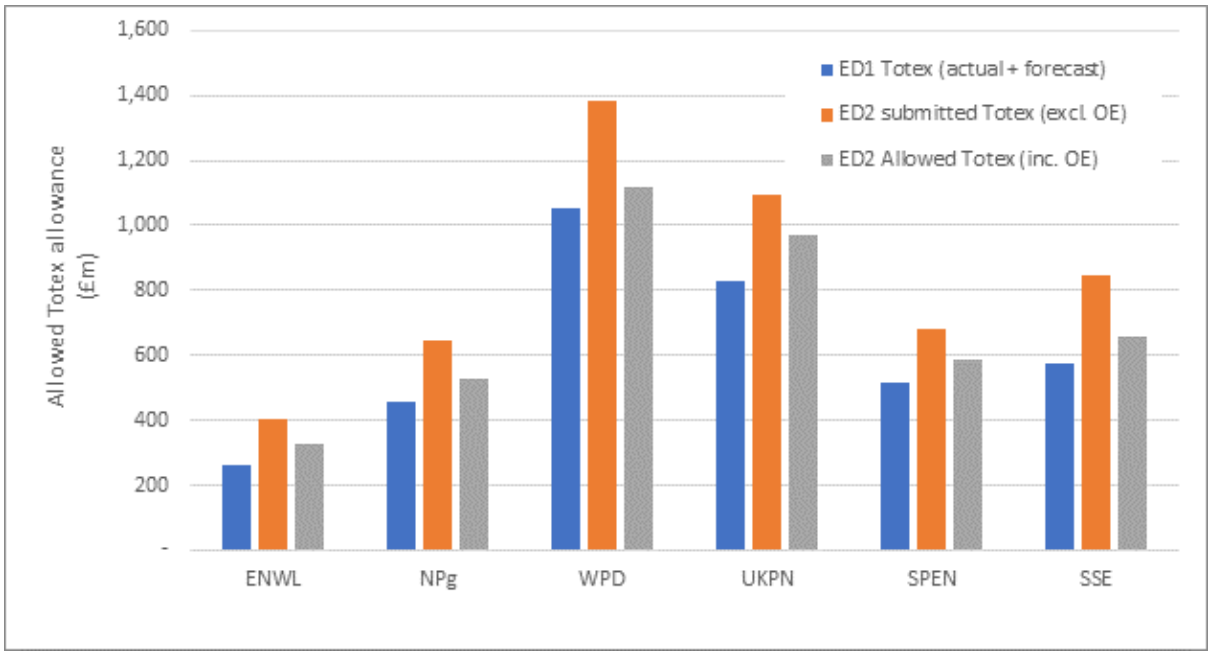
4.7 The Totex Incentive Mechanism (TIM) - otherwise known as the 'sharing factor' - determines exposure of companies to under or overspends compared to our totex allowances. As set out in our SSMD, we have linked the overall strength of the TIM sharing factor rate to the degree of confidence that we have in our cost assessment of totex baselines. As a result, we propose lower incentive rates for companies in RIIO-ED2 compared to RIIO-ED1. We think that our proposed incentive rates represent a reasonable balance of risk and reward for companies. Further detail on the TIM can be found in Chapter 9 of this document.

4.8 Where we have been able to establish our own view of efficient costs for an investment using technical assessment, we have classified the resulting costs as high confidence for Business Plan Incentive (BPI) purposes. However, where we cannot establish an independent view of costs (and have accepted the investment's needs case) we have classified them as lower confidence for BPI purposes.

Setting efficient baseline Totex allowances

4.9 **Error! Reference source not found.** shows the annualised baseline totex allowance comparison for each DNO group, with the adjusted RIIO-ED2 company submissions in December 2022 and the RIIO-ED2 outturn.

Figure 2 DNO Group totex comparison



4.10 We propose to allow almost £20.9bn totex overall, which equates to a reduction of 17% or £4.3bn against company submissions. We have set baseline totex allowances for all DNOs only where we are satisfied of the need for and certainty of proposed work, and where there is sufficient certainty of the efficient cost of the work.

4.11 Primary areas of cost adjustment are load related expenditure and non-load related expenditure, where we are proposing to reduce company submissions by £0.6bn and £1.5bn respectively. As part of our qualitative assessment of the DNO scenarios we have applied a post-modelling demand driver adjustment to all DNOs of £0.7bn based on a common LCT uptake scenario - System Transformation[15] - to ensure that all DNOs are funded on a consistent basis. System Transformation was selected because this relatively conservative Future Energy Scenario will ensure that consumers do not speculatively fund work that may not be required.

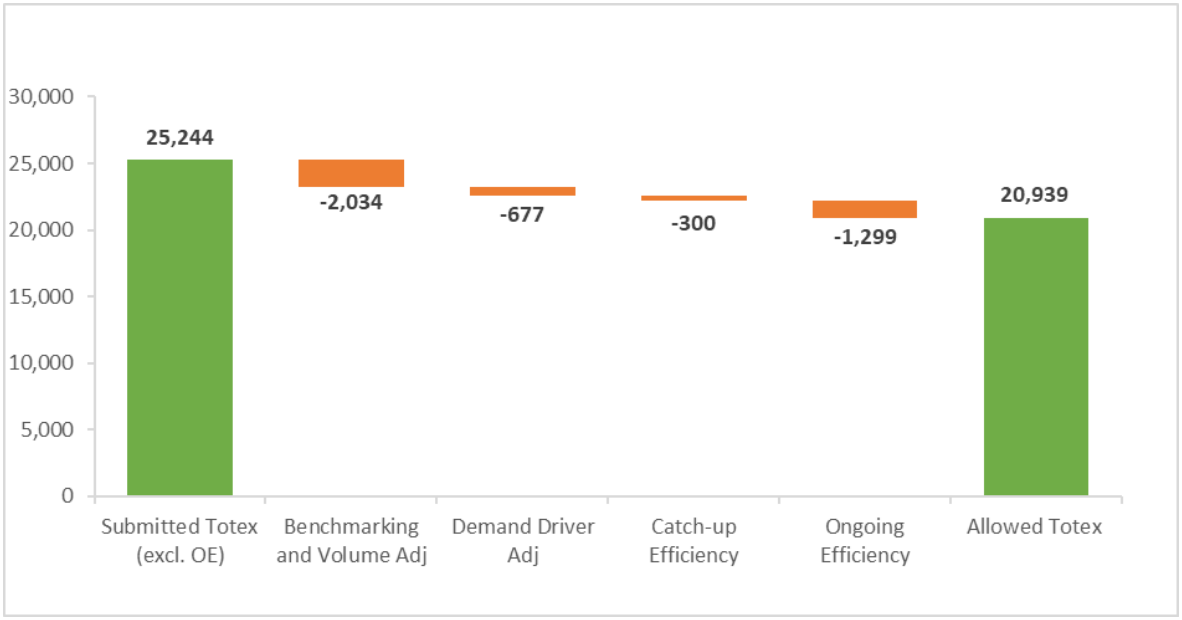
4.12 While this approach will ensure consumers are protected from the risk of investment in network upgrades that are underutilised or not needed, it will not constrain the networks from ensuring timely and efficient investment to support for higher levels of demand growth. Our suite of automatic and administrative

[15] System Transformation is one of four Future Energy Scenarios produced in 2021 by the Electricity System Operator: Future Energy Scenarios 2021 | National Grid ESO

uncertainty mechanisms is sufficiently flexible to meet any future investment needs when the justification for the work is more certain.

4.13 Figure 3**Error! Reference source not found.** below provides a breakdown of the adjustments to aggregate submitted totex, broken down by benchmarking and volume adjustments, catch-up efficiency, and ongoing efficiency across the network companies.

Figure 3 Evolution of submitted totex to proposed totex (£m, RIIO-ED2 total, 2020/21 prices)



Efficiency challenge

4.14 As part of our overall assessment of costs, we set two types of efficiency challenges for the DNOs. These are:

- a catch-up efficiency challenge, where we encourage less efficient companies to catch up on unit costs delivered by the most efficient - or frontier - companies
- an ongoing efficiency challenge, reflecting an overall increase in productivity that we expect even the most efficient companies to deliver to help drive the best value for consumers.

4.15 We propose to set the catch-up efficiency challenge with an efficiency frontier using a 3-year glide path from the 75th to the 85th percentile. This is to enable time for less efficient companies to catch up from a starting point in Year 1 of 75th percentile, which is the target benchmark performance set in RIIO-ED1. Further

detail and supporting evidence for our approach is set out in Chapter 7 of the Core Methodology Document.

4.16 We also propose setting an appropriately stretching but achievable ongoing efficiency target for RIIO-ED2. This reflects our expectation that even the most productive companies in the sector can increase their productivity over time through, for example, adopting new technologies and through investment in broader data and digital capabilities. This may be above the commitments proposed by the DNOs in their Business Plans.

4.17 We are proposing to set the ongoing efficiency challenge at 1.2% per annum for all companies. The rationale and supporting evidence for this challenge is set out in Chapter 7 of the Core Methodology Document.

5. Ensuring efficient financing

Introduction

5.1 In this chapter, we outline our key proposals on the financial package for RIIO-ED2. Our Draft Determinations seek to align the interests of companies and investors to those of consumers by setting the appropriate balance of risk and return.

5.2 We propose to incentivise companies to deliver stretching levels of efficiency and levels of service that improve over time. Similarly, our Draft Determinations seek to ensure that investor returns during RIIO-ED2 fairly reflect the levels of service and cost efficiency delivered for consumers and are commensurate with the level of risk that underpins their investment.

Summary of our finance proposals

5.3 Alongside totex, several core aspects of our finance package are key determinants of the price control's impact on consumer bills.

5.4 In line with the wider RIIO-ED2 aims of driving better value for consumers, preparing regulated companies for the energy system of the future and ensuring that the price controls provide sufficient funding for net zero through uncertainty mechanisms and other measures, our finance proposals reduce the allowed return on capital, resetting to levels consistent with current evidence and market conditions.

5.5 The key elements of our Draft Determinations finance parameters are summarised in Table 3 below.

Table 3 Draft Determinations on the baseline allowed return on capital (average for five years ending 31 March 2028, CPIH real)

	ENWL, NPgY, SPEN, SSEN, SPN, EPN, EMID, SWEST & WMID (frequent issuers of debt)	LPN, NPgN & SWALES (infrequent issuers of debt)
Notional gearing	60%	60%
Cost of equity allowance	4.75%	4.75%

	ENWL, NPgY, SPEN, SSEN, SPN, EPN, EMID, SWEST & WMID (frequent issuers of debt)	LPN, NPgN & SWALES (infrequent issuers of debt)
Cost of debt allowance	2.26%	2.32%
WACC allowance	3.26%	3.29%

5.6 Our finance-related proposals apply methodologies decided on in our SSMD and are calibrated to market evidence.

Cost of capital proposals

5.7 In our SSMD, we decided to set an overall cost of capital by calculating separately the cost of equity and cost of debt. We take a weighted average of the two, with the weight being the notional gearing (how much of each type of capital we expect a typical company to have in its capital structure). We describe below how we calibrate the allowed return on equity and the allowed return on debt.

5.8 The cost of equity is an estimation of the return that equity investors expect. It is a significant part of the price control settlement. It is important because the energy sector requires investors that are willing to invest in utility infrastructure to meet consumer needs.

5.9 We set out in our SSMD that we would continue to use the same equity methodology for RIIO-ED2 as that applied in the RIIO-ED2 controls for transmission and gas distribution.

5.10 We have considered the Competition and Markets Authority's (CMA) Final Determinations on the RIIO-2 Gas Distribution & Transmission (RIIOGD&T2) price control appeals, which concluded in October 2021,[16] and updated our analysis for RIIO-ED2 using up-to-date market information, including recent values for the risk-free-rate. We now estimate a cost of equity allowance of 4.75% and propose to apply this for the RIIO-ED2 price control.

5.11 The cost of debt allowance is a significant component of allowed returns and the cost to consumers of network services. We confirmed in our SSMD the methodology we would apply to calculate the cost of debt for RIIO-ED2, which is

[16] Energy Licence Modification Appeals 2021 - GOV.UK (www.gov.uk)

also consistent with that applied to the RIIO-ED2 controls for transmission and gas distribution. We have also updated the calibrations to account for current ED sector market evidence.

5.12 Based on this methodology, and applying the current market evidence, we are proposing to set the average debt allowance over RIIO-ED2 at 2.26% real CPIH for frequent issuers of debt and 2.32% real CPIH for infrequent issuers of debt.

Financeability

5.13 Ofgem has a duty to have regard to the need to secure that companies are able to finance the activities which are the subject of obligations imposed by or under the relevant legislation. Most regulated utilities raise debt finance by issuing bonds in the capital markets. In addition, the companies have licence requirements to take all appropriate steps within their power to maintain an investment grade credit rating.

5.14 These ratings are issued by firms called rating agencies. An investment grade credit rating signals a strong likelihood that the company will be able to meet its liabilities and keeps the cost of debt low for networks. This keeps network charges low for consumers.

5.15 As set out in our SSMD, and consistent with our approach for the transmission and gas distribution RIIO-2 controls, we assess financeability on a notional company basis, using market datapoints to guide our assumptions about it.

5.16 In order to confirm the financeability of the proposed RIIO-ED2 package, we take an 'in the round' assessment of whether all the individual components of the determinations allow an efficient notional operator to generate cash flows consistent with its financing needs.

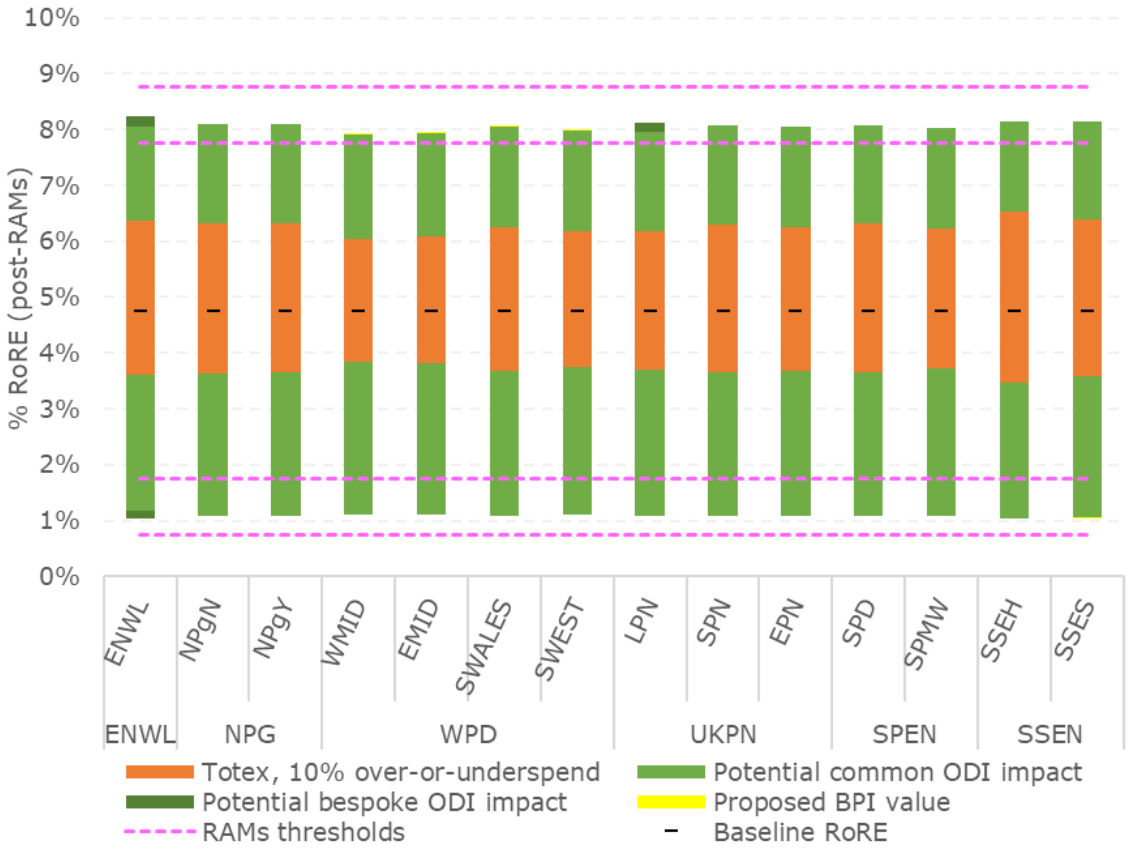
5.17 We have assessed the financeability of our Draft Determinations proposals for each notional network individually based on the proposed baseline totex allowances set out in Chapter 4. We have also applied the following assumptions for depreciation and capitalisation rates and notional gearing consistent with our SSMD without adjustment or modification for financeability purposes:

- a depreciation policy based on a 45-year asset life
- that capitalisation rates will reflect the 'natural' balance of capex and opex
- each notional network is assumed to begin the price control period with a notional gearing of 60%, reduced from 65% in RIIO-ED1.

5.18 Further details on our financeability assessment are set out in the Finance Annex. In summary, we are satisfied that the proposed package for RIIO-ED2 provides each notional licensee with reasonable headroom above a minimum investment grade credit rating in the baseline.

5.19 We consider that our RIIO-ED2 price control package strikes an appropriate balance between scope for outperformance for high performing companies and the scope for underperformance for poorly performing companies. We demonstrate this in Figure 4 below

Figure 4 Maximum/minimum RoRE ranges for licensees after RAMs are applied



5.20 We also highlight that there is a difference between possible outcomes and probable outcomes. It would be incorrect to assume that the largest downside shown in this RoRE chart has precisely the same probability as the largest upside. Figure 4 above presents the post-RAMs RoRE ranges to help demonstrate the final calibration of the RIIO-ED2 package after accounting for the potential impact of RAMs thresholds. For further detail, please see Chapter 3 of the Finance Annex.

Return Adjustment Mechanism (RAMs)

5.21 We are proposing to implement a symmetrical return adjustment mechanism for RIIO-ED2 with threshold levels of:

- 300 basis points (bps) either side of the baseline allowed return on equity, with an adjustment rate of 50% of returns above or below the relevant threshold
- 400bps either side of the baseline allowed return on equity, with an adjustment rate of 90% of returns above or below the relevant threshold.

5.22 Further detail on all finance elements can be found in the Finance Annex. This includes our proposals and rationale for allowed returns, debt allowances, our financeability assessments, notional gearing, capitalisation rates, regulatory depreciation, indexation of Regulated Asset Value (RAV) and allowances, the calibration of RAMs, tax, pensions and other finance issues.

6. Adjusting allowances for uncertainty

Introduction

6.1 This chapter sets out our proposed approach to managing uncertainty for the DNOs, including a summary of our decisions for each uncertainty mechanism (UM) that will apply to the DNOs during the RIIO-ED2 price control period.

6.2 We are proposing to set baseline totex allowances for the DNOs only where we are satisfied on the need for and certainty of the proposed work, and where there is sufficient certainty on the efficient cost of delivery.

6.3 Where uncertainty remains, we are proposing to use a range of UMs to manage this during the RIIO-ED2 price control period. UMs allow us to adjust a network company's allowance in response to changing developments during the price control period.

6.4 The five types of UMs that we propose to use in RIIO-ED2 are volume drivers, re-openers, pass-through mechanisms, indexation and use-it-or-lose-it allowances:

- volume drivers to adjust allowances in line with the actual volume of work delivered, where the volume of certain types of work that will be required over the price control is uncertain (but where the cost of each unit is stable)
- re-opener mechanisms to decide, within a price control period, on additional allowances to deliver a project or activity once there is more certainty on the needs case, project scope or quantities
- cost pass-through mechanisms to adjust allowances for costs incurred by the DNO over which they have limited control and that, in general, we consider the full cost of which should be recoverable (eg business rates)
- indexation to provide network companies and consumers some protection against the risk that outturn prices are different to those that were forecasted when setting the price control, eg general price inflation or cost pressures
- use-it-or-lose-it (UIOLI) allowances to adjust allowances where the need for work has been identified, but the specific nature of work or costs are uncertain.

Our approach to setting uncertainty mechanisms

6.5 Forecasting costs and outputs with confidence for the duration of a price control is challenging. We set out our decisions on many of the UMs required to manage

material uncertainty in the cost and/or scope of work in specific areas of the price control in our SSMD.[17] Where there were outstanding decisions, we discuss them here and throughout the Core Methodology document and company specific annexes. We have also considered how companies are managing risk as part of our cost assessment processes and evaluated the numerous bespoke UMs proposed in companies' Business Plans.

6.6 When considering whether to approve a UM that has been proposed by the network companies, we need to weigh these forecasting risks against the incentives for companies to conduct their activities efficiently within their price control allowances. Where we propose to accept or reject UMs in our Draft Determinations, we have considered the evidence provided by the DNOs in support (including any of the information listed in the BPG). In addition to this, we also considered whether the proposal provides sufficient:

- evidence of whether the uncertainty is likely to occur within RIIO-ED2
- information to enable the design and implementation of the mechanism (eg to identify the circumstances in which the licensee should be able to request allowances under a re-opener, or to set a unit cost allowance for a volume driver), and
- information on how any drawbacks might be mitigated to deliver value for money and efficient delivery.
- we also considered whether there was merit in applying any UM proposed by the companies on a common basis across all DNOs, or whether it is a genuinely bespoke mechanism.

6.7 Finally, we propose a set of common design parameters for re-openers and further details are set out in this chapter.

RIIO-ED2 Uncertainty Mechanisms

Background

6.8 In our SSMD, we proposed that we would have 19 common UMs in RIIO-ED2. In addition, we found that some bespoke UMs were similar across DNOs and/or could be applied on a common basis. We propose taking these forward as common UMs instead. We are proposing a total of 34 common UMs in RIIO-ED2.

[17] RIIO-ED2 SSMD Annex 2, Chapter 8 RIIO-ED2 Sector Specific Methodology Decision | Ofgem

6.9 We propose to allow an additional three bespoke UMs for two DNOs in RIIO-ED2.

6.10 The full list of common and bespoke UMs that will apply in RIIO-ED2 is in Table 4 below.

Consultation position

Table 4 Summary of the uncertainty mechanisms in RIIO-ED2

UM name	UM type	Further detail
Common UMs		
Coordinated Adjustment Mechanism	Re-opener	Overview, Chapter 5 of SSMD
Real Price Effects	Indexation	Annex 2, Chapter 4 of SSMD
Ofgem licence fee	Pass-through	Annex 2, Chapter 8 of SSMD
Business rates	Pass-through	Annex 2, Chapter 8 of SSMD
Transmission Connection Point Charges	Pass-through	Annex 2, Chapter 8 of SSMD
Pension deficit repair mechanism	Pass-through	Annex 2, Chapter 8 of SSMD
Ring-fence costs	Pass-through	Annex 2, Chapter 8 of SSMD
Miscellaneous pass-through	Pass-through	Annex 2, Chapter 8 of SSMD
Environmental re-opener	Re-opener	Chapter 3, Core Methodology Document
Visual amenity	UIOLI	Chapter 3, Core Methodology Document
Polychlorinated biphenyls	Volume driver	Chapter 3, Core Methodology Document
Load Related Expenditure (LRE) – Secondary Reinforcement	Volume driver	Chapter 3, Core Methodology Document
LRE – Low Voltage (LV) Services	Volume driver	Chapter 3, Core Methodology Document

UM name	UM type	Further detail
LRE - General	Re-opener	Chapter 3, Core Methodology Document
Net Zero re-opener	Re-opener	Chapter 3, Core Methodology Document
Digitalisation re-opener	Re-opener	Chapter 4, Core Methodology Document
DSO re-opener	Re-opener	Chapter 4, Core Methodology Document
Worst Served Customers	UIOLI	Chapter 6, Core Methodology Document
Severe Weather 1-in-20	Pass-through	Chapter 6, Core Methodology Document
Storm Arwen	Re-opener	Chapter 6, Overview Document
Physical security	Re-opener	Chapter 6, Core Methodology Document
Electricity system restoration	Re-opener	Chapter 6, Core Methodology Document
Cyber resilience OT and IT	Re-opener	Chapter 6, Core Methodology Document and Confidential DNO annex
Cyber Resilience OT	UIOLI	Chapter 6, Core Methodology Document and Confidential DNO annex
Smart meter information technology costs	Pass-through	Chapter 7, Core Methodology Document
Smart meter communications costs	Pass-through	Chapter 7, Core Methodology Document
Streetworks costs	Re-opener	Chapter 7, Core Methodology Document
Rail electrification	Re-opener	Chapter 7, Core Methodology Document
High Value Projects	Re-opener	Chapter 7, Core Methodology Document

UM name	UM type	Further detail
Cost of debt indexation	Indexation	Chapter 2, Finance Annex
Cost of equity indexation	Indexation	Chapter 3, Finance Annex
Tax review	Re-opener	Chapter 7, Finance Annex
Inflation indexation of Regulatory Asset Value (RAV)	Indexation	Chapter 9, Finance Annex
Electric Vehicle Provider of Last Resort	To be confirmed	Chapter 7, Overview document
Bespoke UMs		
Moorside	Re-opener	ENWL company annex, chapter 4
Shetland	Re-opener	SSEN (SSEH only)	SSEN company annex, chapter 4
Hebrides and Orkney Whole Systems (HOWS)	Re-opener	SSEN (SSEH only)	SSEN company annex, chapter 4

6.11 We provide further detail in this section on the common UMs which have either changed or been introduced since our SSMD and are not discussed elsewhere in our Draft Determinations. Where a UM has not changed since our SSMD we have not discussed it any further in these Draft Determinations.

6.12 Bespoke UMs are discussed in the relevant company annexes.

Electric Vehicles Provider of Last Resort (EV PoLR)

Electric Vehicle Provider of Last Resort UM	
Purpose	A new mechanism to allow for the recovery of costs directly incurred due to activities associated with the Provider of Last Resort provisions in Standard Licence Condition 31F
Benefits	To avoid including uncertain spend in baseline allowances, and instead address costs if they occur

Background

6.13 Standard Licence Condition 31F (SLC 31F) permits DNOs to act as the Provider of Last Resort (PoLR) and operate EV charge points, "*where the Authority is satisfied*

that no person other than the licensee is able to own, develop, manage or operate an Electric Vehicle (EV) charging point or could not do so at a reasonable cost and in a timely manner".

6.14 In this section we are proposing to provide a funding mechanism for all DNOs, to recover costs associated with the development, management or operation of necessary EV chargepoints where the DNO is providing these in the case of wider market failure (referred to as PoLR activities in this section).

Consultation position

Table 5 Our EV PoLR UM consultation position

Parameter	Consultation position
Funding Mechanism	To introduce a new funding mechanism for PoLR activities. We are considering two options to fund PoLR activities: Pass-through mechanism Directly Remunerated Service

Rationale for consultation position

6.15 There are currently no mechanisms to fund DNOs to deliver their obligations under SLC 31F; this is because to date, the PoLR has not been invoked. However, the rollout of EV infrastructure is expected to continue into RIIO-ED2 and we think there may be a potential requirement for DNOs to invoke the PoLR over this period.

6.16 We also think it's important that PoLR activities are adequately funded, because even in areas where it is not yet commercially viable for market participants to enter, we want EV charge points to be installed so that no communities are left behind as we transition to a decarbonised transport system. Therefore, we are proposing to introduce a funding mechanism for PoLR activities in RIIO-ED2.

6.17 We considered whether DNOs should be incentivised to make EV charge points into profit-making infrastructure. We do not think this is appropriate because it is not consistent with the intention of the SLC 31F, which is to position DNOs as neutral market facilitators. It could also lead to perverse outcomes, such as high

charging prices, that do not support Government or Ofgem aims of ensuring that no one is left behind by the energy transition.[18]

6.18 We are therefore considering two funding mechanisms for PoLR costs:

- pass-through - in the event that Ofgem issues a PoLR direction to a DNO, the DNO can automatically pass-through any revenue and costs it has directly incurred from undertaking its legal obligation, to consumers
- Directly Remunerated Service (DRS) - PoLR revenue and costs are reported as a DRS, where the net revenue from charges levied in respect of operating EV charge points is reported in regulatory reporting packs. We propose that these values are included as a variable value in the Price Control Financial Model (PCFM), such that the net losses (or profits) are added to (or subtracted from) allowed revenue.

6.19 We believe that these funding options are appropriate as they will ensure that EV charge points will not become part of the regulated asset base. This is relevant because the intention of SLC 31F is to only allow DNOs to own and operate EV charge points where no other provider can do so (at a reasonable cost or in a timely manner). It is not expected that these assets should be within DNO ownership for long periods of time.

6.20 We also think that these funding options are appropriate as the revenue that DNOs earn from the operation of EV charging points will be largely driven by external factors such as national and local Government policy on net zero and the decarbonisation of transport, and local socio-economic factors. These are outside of the control of the DNO and therefore we think it is justifiable for DNOs to be able to recover net revenue through either of the proposed funding mechanisms.

6.21 Our preferred option is for PoLR activities to be funded by a DRS. This is because we think that the ownership and operation of EV charge points are outside of normal DNO activities. This is consistent with SLC 31F which seeks to limit the circumstances where DNOs can own and operate EV charge points.

6.22 The number of times a DNO may be required to act as a PoLR in RIIO-ED2 will vary, however we think the funding requirement is common to all DNOs. We therefore propose a common funding mechanism.

[18] Energy white paper: Powering our net zero future - GOV.UK (www.gov.uk)

Consultation questions

Q1. Do you agree with our proposal to introduce a new funding mechanism for PoLR activities?

Q2. What are your views on our two proposed options, and do you agree with our preferred option of a DRS?

Storm Arwen Re-opener

Storm Arwen Re-opener	
Purpose	Provides DNOs with the opportunity to apply to adjust their baseline allowances where they identify a change to the scope of work they expect to deliver, as a result of the Energy Emergencies Executive Committee (E3C's) or Ofgem's recommendations from the Storm Arwen review
Benefit	Improves network resilience to severe storm events

Background

6.23 Our review of the DNOs' response to Storm Arwen[19] was published in June 2022 and includes 20 recommendations to minimise the impacts of future severe weather events on DNO networks. The E3C's report[20] into the same event identified an additional 32 recommendations to be taken forward. For further information on all the arrangements we are proposing to ensure these recommendations are implemented and funded in RIIO-ED2, please refer to Chapter 13 of this document.

6.24 While all recommendations are expected to be implemented by 1 April 2023, we recognise that some of these could modify the scope of work that DNOs are expected to deliver in RIIO-ED2.

6.25 In this section we consult on our proposal to include a re-opener in RIIO-ED2 to deal specifically with the consequences of the recommendations from the Storm Arwen reviews.

[19] https://www.ofgem.gov.uk/publications/ofgem-publishes-full-report-following-six-month-review-networks-response-storm-arwen
[20] Storm Arwen electricity distribution disruption review - GOV.UK (www.gov.uk)

Consultation position

Table 6 Storm Arwen Re-opener consultation position

UM parameter	Consultation position
UM type	Common re-opener for all DNOs.
Trigger	Change to DNOs' scope of work caused by implementing a recommendation from Ofgem or the E3C's Storm Arwen reviews.
Re-opener Window	DNOs should have one opportunity to trigger the re-opener: 22 January 2024 - 26 January 2024
Materiality Threshold	Apply a materiality threshold of 1%, in line with our common approach to re-openers.

Rationale for consultation position

Re-opener and Trigger

6.26 We propose to have a re-opener to adjust allowances where DNOs identify a change to their scope of work, as a direct result of recommendations from Ofgem or the E3C's reviews into Storm Arwen.

6.27 We think that there is too much uncertainty around the scope and costs of implementing these recommendations, to include this activity within baseline allowances.

6.28 We consider that a common re-opener is appropriate because this uncertainty exists for all DNOs.

Re-opener Window

6.29 All Storm Arwen recommendations are expected to be implemented by 1 April 2023. We believe that a single re-opener window is appropriate as we have already provided DNOs with baseline funding for network resilience activities.

6.30 We think that a re-opener application window in January 2024 should give DNOs sufficient time to identify and cost any changes to their scope of work as a result of the Storm Arwen recommendations.

Consultation questions

Q3. Do you agree with our proposal to introduce a re-opener to deal with recommendations from the Storm Arwen review, our proposed trigger and re-opener window?

High Value Projects Re-opener

High Value Projects Re-opener	
Purpose	To help mitigate the risk associated with large, high value projects.
Benefit	Protects consumers and companies from uncertainty associated with large, high value projects where there are significant risks on the needs case, or proposed solution.

Background

6.31 In our SSMD we said that we do not consider the RIIO-ED1 High Value Projects (HVP) re-opener to be fit for purpose for RIIO-ED2.

6.32 High Value Projects (HVPs) in RIIO-ED1 are defined as discrete projects valued at more than £25m in the price control. HVPs are discrete projects with specific deliverables. Given that their size and nature could involve a degree of uncertainty, we included provisions for Ofgem to review the DNOs' baseline HVP expenditure, as well as a reopener window for DNOs to propose new HVPs within the price control.

Consultation position

Table 7 Our High Value Projects re-opener consultation position

UM parameter	Consultation position
UM type	Common re-opener for all DNOs.
Trigger	DNO Triggered
Re-opener Window	DNOs should have one opportunity to trigger the re-opener: 22 January 2026 - 26 January 2026
Materiality Threshold	Individual non-load related schemes of £25m or more not included as part of ex ante allowances

Rationale for consultation position

6.33 Having reviewed the submitted Business Plans and following further engagement with stakeholders we now consider that there is value in maintaining a HVP re-

opener for non-load related expenditure. We believe our Load Related Expenditure (LRE) re-opener is sufficient to manage uncertain load-related HVPs.

Re-opener and Trigger

6.34 We propose to have a re-opener to adjust allowances where DNOs identify a change to their scope of work, consistent with the RIIO-ED1 approach.

6.35 We consider that a common re-opener is appropriate because this uncertainty exists for all DNOs.

Re-opener Window

6.36 We think that a re-opener application window in January 2026 is appropriate as we believe that DNOs should be aware of large schemes through their work with stakeholders, early in the RIIO-ED2 period.

Materiality threshold

6.37 While some DNOs suggested a materiality threshold slightly below the RIIO-ED1 threshold of £25m, we have seen no compelling justification to deviate from this threshold in RIIO-ED2.

Consultation questions

Q4. Do you agree with our proposal to maintain the RIIO-ED1 High Value Project mechanism and focus it on non-load related HVPs in RIIO-ED2?

Consultation position on RIIO-ED1 uncertainty mechanisms to be removed in RIIO-ED2

Background

6.38 This section sets out the RIIO-ED1 uncertainty mechanisms that we propose to remove for RIIO-ED2. This is because they are either no longer required or have been replaced by new or amended UMs.

6.39 Our SSMD confirmed that we would remove the RIIO-ED1 Mechanisms for Load-Related Expenditure (LRE), link boxes and the Innovation Rollout Mechanism. We do not discuss these further here.

Consultation position

Table 8 RIIO-ED1 UMs proposed for removal in RIIO-ED2

UM name	Consultation position
Load Related Expenditure (RIIO-ED1 mechanism)	Decision set out in Annex 2, Chapter 8 of SSMD. Revised proposals for LRE UMs in RIIO-ED2 set out in Chapter 3 of Core Methodology Document.
Link Boxes	Decision set out in Annex 2, Chapter 8 of SSMD
Subsea Cables	Decision set out in Annex 2, Chapter 8 of SSMD
Smart Meter Volume Driver	To remove the RIIO-ED1 Smart Meter Volume Driver in RIIO-ED2
Innovation Rollout Mechanism	Decision set out in Annex 2, Chapter 8 of SSMD

Smart Meter Volume Driver

Rationale for consultation position

6.40 The purpose of this volume driver was to provide network companies with additional funding for DNO related call outs attributable to the rollout of smart meters. In RIIO-ED1 we recognised that this was an important issue and that the rate and cost of call outs was uncertain and implemented a volume driver. In our view, there is not the same level of uncertainty in smart meter intervention costs in RIIO-ED2 compared to RIIO-ED1. The volume risk should now be addressed as there is an end date for installation of all smart meters during RIIO-ED2. For RIIO-ED1 we did not have sufficient data available to determine an efficient volume of call outs and cost per call out, however we now have historical and forecast RIIO-ED1 and RIIO-ED2 data that can be used to benchmark and assess costs. Accordingly, we propose that future costs are included in Business Plans as ex ante costs and propose the removal of this mechanism.

Consultation questions

Q5. Do you agree with our proposal to remove the RIIO-ED1 smart meter volume driver?

Consultation position on common design parameters for re-openers

Common design parameters for re-openers	
Purpose	To provide clarity on the parameters and process relating to re-openers.
Benefits	Protects both consumers and network companies from uncertainty around requirements, unknown and emerging risks/threats, new regulatory requirements, and technology changes.

Background

6.41 In the RIIO-2 Final Determinations for transmission and gas distribution, we decided that we would apply a set of common design parameters that would apply as the default position for re-openers, noting that they would not necessarily apply to all re-openers. Our SSMD said that we consider these parameters should also apply to RIIO-ED2, since the framework for re-openers (and the nature of the uncertainties they are designed to address) is broadly comparable.

6.42 We decided upon a number of these parameters in our SSMD. We confirm our views here, as well as setting out our position on the outstanding decisions.

Consultation position

Table 9 Our consultation position on common parameters for re-openers

UM parameter	Consultation position
Re-opener application windows	Bring forward re-opener application windows from May to January (apart from the first year where it will be the last week of April 2023 lasting one week). Reduce re-opener application window from one month to one week (ie, last week of January).
Application requirements	Provide additional detail and guidance where possible in licence conditions and guidance.
Authority triggered re-openers	The decision whether the Authority can trigger a re-opener at any time during the price control will be made on a case-by-case basis.

UM parameter	Consultation position
Aggregation	To not include an aggregation process for re-openers to meet the materiality threshold.
Materiality threshold	For each individual re-opener application, set a materiality threshold such that we propose to only adjust allowances if the changes to allowances resulting from our assessment, multiplied by the TIM incentive rate applicable to that licensee, exceeds a threshold of 1% of annual average base revenues (as set out in Final Determinations).

Rationale for our consultation position

6.43 Our positions on re-opener application windows, application requirements, Authority triggered re-openers and aggregation maintain the decisions we made in Annex 2 Chapter 8 of our SSMD.

6.44 Bringing the re-opener application windows forward from May to January will allow a longer lead-time for Ofgem to ask clarifying questions or gather information ahead of the Annual Iteration Process. Reducing the application window provides Ofgem and DNOs clarity on when applications need to be submitted, allowing parties to better plan their resources.

6.45 Additional detail and guidance will ensure that re-opener applications are prepared in a way that provides us with the information we require to be able to make timely decisions. We will consult on the guidance we produce before it comes into effect.

6.46 We propose to decide on whether there should be an Authority triggered re-opener on a case-by-case basis. Where the Authority trigger is included, this will be subject to the same scope and materiality threshold that applies to an application made by a licensee. We believe that it is important to include the option for an Authority trigger for some re-openers, particularly where the re-opener may be triggered by changes that reduce a network company's workload.

6.47 We consider that network companies should manage the uncertainty they face and that the regulatory regime should not protect network companies against all forms of uncertainty. Allowing re-openers to be aggregated may increase the risk of adjustments being made to allowed revenues that should otherwise be managed by network companies. We also believe that allowing re-openers to be aggregated

could reduce the effectiveness of the materiality threshold in driving network companies to manage their allowances in the most efficient way.

6.48 Our SSMD did not decide on the threshold level, and we committed to consulting on this through the Draft Determinations.

6.49 First, we consider that a materiality threshold ensures network companies manage non-material variations in expenditure. It also mitigates the regulatory burden for Ofgem that is associated with assessing multiple small cost claims from the network companies. We therefore do not think that a zero-materiality threshold is an appropriate common parameter. This is the case even when the uncertainty is of a legislative and/or compliance driven nature. In such cases, the peripheral impacts of legislation should continue to be dealt with through baseline allowances (for example, see Annex 1, paragraph 9.58 of our SSMD where we discuss the environmental re-opener).

6.50 Second, the threshold should provide a balance to ensure network companies and consumers are protected from significant variations in expenditure over the price control. It should also ensure network companies manage non-material variations in expenditure, rather than protecting them from all risks. On this basis, we propose to set a common materiality threshold such that we will only adjust allowances if the changes to allowances resulting from our assessment, multiplied by the TIM incentive rate applicable to that licensee, exceeds a threshold of 1% of annual average base revenues (as set out in Final Determinations).

6.51 For the avoidance of doubt, this would be a common threshold for most re-openers, although there may be cases where a different threshold is appropriate. We think this is limited to the Electricity System Restoration, Enhanced Physical Site Security, Cyber Resilience OT, Cyber Resilience IT and CAM re-openers. We discuss that under the specific mechanism where this is the case.

Consultation questions

Q6. Do you agree with our proposed approach for a common materiality threshold being applied to RIIO-ED2?

7. Smart Optimisation

Introduction

7.1 Smart optimisation is a cross cutting initiative, which will be delivered by investment in network monitoring, data and digital processes and new DSO functionalities. Network operators need to make full use of smart technologies and whole systems approaches to minimise cost, provide flexibility to the system, help to balance supply and demand and actively manage constraints on the network.

7.2 A smart and flexible energy system is essential to achieving the UK's net zero climate goal while keeping energy bills affordable for everyone. As we change the way we fuel our cars and heat our homes, demand for electricity will increase from millions of new EVs and HPs. Being more flexible in how and when we generate and use electricity will help reduce the investment needed in grid capacity to meet this demand, resulting in significant savings on energy bills.

7.3 Smart optimisation of the distribution networks will be increasingly beneficial to whole system integration. Decisions about the operation of the distribution networks will significantly affect not only the transmission networks but also the operation of charging networks for EVs, the operation of domestic HPs, and the behaviour of distributed energy resources. Smart optimisation is also about taking a whole system, planned view of the future and enabling other stakeholders to plan and operate accordingly.

7.4 In this chapter we set out our proposed approach to achieving this smart optimisation through the RIIO-ED2 price control. In doing so we highlight the outcomes of our reviews and the policy actions we are proposing to take ahead of and during the RIIO-ED2 price control.

Smart optimisation through RIIO-ED2

7.5 The smart optimisation of networks requires the utilisation of network data to drive improved decision-making within the DNOs. By optimising decision-making, DNOs will be able to solve the increasingly complex challenges posed by increasing asset connections and the resulting rise in electrical demand. We believe RIIO-ED2 is the right opportunity to drive smart optimisation of distribution networks forward due to the LV monitoring strategies proposed by the

DNOs. LV network data provides DNOs with a full suite of network data with which to undertake decisions relating to network and whole system optimisation.

7.6 We are proposing to drive the smart optimisation of distribution networks forward by:

- incentivising the rollout of network visibility through DSO-related metrics
- allowing and encouraging the DNOs to invest in the data and digital capabilities required to operate a smart network through the price control
- linking the funding of LRE to real network conditions, so that the DNOs can make optimal choices between the procurement of network upgrades and use of flexibility services to facilitate efficient investment in the distribution network
- creating a whole system LO that will require DNOs to plan strategically to deliver these outcomes. This will be underpinned by a system of monitoring and reporting.

7.7 These proposals will be described at a high level in this chapter, but further information can be found in Chapters 3 and 4 of the Core Methodology Document.

7.8 The Smart System and Flexibility Plan 2021 sets out Government and Ofgem's vision for a future net zero energy system.[21] DNOs have a significant role in working to achieve net zero as they will have to integrate and supply millions of smart consumer devices (EVs, HPs, etc) and thousands more distributed energy resources. The plan recommends that institutional and governance arrangements at a sub-national level need to be fit for purpose and meet energy system needs in the long term. DNOs will have an important role to play in these arrangements before and during RIIO-ED2.

7.9 The volume of smart consumer devices and distributed energy resources expected to connect to the network over the price control period will drive the need for DNOs to find creative solutions to constrained network capacity. Solutions to overcoming network constraints include greater utilisation of local flexibility, and intelligent and automated investment in network infrastructure. To deliver these solutions DNOs will need to enhance and improve their processes and tools. We note the increasing importance of intelligent operation of the energy networks in

[21] Transitioning to a net zero energy system: smart systems and flexibility plan 2021 - GOV.UK (www.gov.uk)

the context of meeting net zero and the need to utilise the RIIO-ED2 price control to ensure the delivery of these outcomes.

7.10 As part of the RIIO-ED2 Business Plan submission process we asked the DNOs to submit:

- a DSO Strategy that sets out how the network companies will plan efficiently in the context of uncertainty: promote operational network visibility and data availability: and embed simple, fair and transparent rules and processes for procuring distribution flexibility services
- a Network Monitoring Strategy detailing the ways in which network monitoring can improve visibility and inform planning decisions, network operation, and use of flexibility
- a Digital Strategy and Action Plan (DSAP) that provides a roadmap for DNOs to develop and deliver new data tools and digital services including those associated with network planning and operations
- a proposal on their approach to whole system solutions as part of the BPI
- an LRE plan to support long term whole system optimisation.

7.11 The investment proposals set out by the DNOs in their DSO Strategy, Network Monitoring Strategy and the DSAP should, based on our assessment, assist the DNOs in optimising their networks and as a result they should be able to deliver:

- improved capacity management - improvements to network visibility proposed for RIIO-ED2 should assist DNOs in good decision-making in relation to network reinforcement. When combined with better modelling and data management tools, DNOs should be able to evaluate flexible market solutions, smart technologies and compare them against traditional reinforcement and deferral decisions faster and at greater scale than in RIIO-ED1
- faster connection processes – as a result of improved network visibility, DNOs will have the opportunity to revisit assumptions on network connection capacity, and new digital services will allow self-serve connection processes to be enhanced, increasing the speed of connections process
- improved network operations - DNOs have proposed a series of data analytics tools that leverage LV monitoring data to allow targeted interventions in network efficiency, losses, and power quality.

Network Monitoring

7.12 In our view network monitoring is a fundamental building block supporting smart optimisation, future DSO activities and load related planning investment proposals. With network data generally available for higher voltage networks and large substations in RIIO-ED1, and LV network data delivered by the network monitoring rollouts proposed in RIIO-ED2, DNOs will have a more complete understanding of their network.

7.13 LV network data allows for real-time assessment of network conditions across the entire DNO network, reducing the number of assumptions required when DNOs are making decisions about reinforcement, procurement of flexibility, and connections.

7.14 Over the course of RIIO-ED1, there has been significant developments in the energy sector with respect to digitalisation, flexibility, and smart grid technologies, all of which seek to leverage better network data.

7.15 Through the RIIO-ED1 Network Innovation Competition and NIA mechanisms, there has been significant innovation investment in network monitoring, automation, and digital grids. This investment in innovation has allowed network monitoring and automation technologies to mature such that they can be deployed at scale in RIIO-ED2.

7.16 In the RIIO-ED2 BPG we asked DNOs to submit Network Visibility Strategies which outline their approach to visualising the network using a combination of technologies including direct measurement, modelling, and smart meter data.[22]

7.17 In response all DNOs have submitted proposals which should enable them to reach full network visibility by the end of RIIO-ED2, however, some DNOs will have full coverage of their networks prior to this.

7.18 All DNOs have prioritised the physical installation of monitoring to highly utilised network areas and areas with the highest potential flexibility needs. The preferred approach targets 100% coverage of the networks through a combination of physical monitoring and advanced data analytics by the end of RIIO-ED2.

[22] RIIO-ED2 Business Plan Guidance, Paragraph 4.19 RIIO-ED2 Business Plan Guidance | Ofgem

7.19 We consider that these network monitoring strategies are proportionate and should lead to better outcomes for consumers. The deployment of network monitoring gives the DNOs the capability to:

- access historical and trend data to make better decisions on network reinforcement, evaluate flexibility and smart solutions
- increase operational flexibility via direct monitoring of LV feeders, enabling proactive reconfiguration and other interventions
- detect and mitigate power quality and phase imbalance issues to increase network capacity
- We expect DNOs to publish the information gathered from network monitoring in support of network planning activities and use this data to provide increased transparency for network users.

DSO

7.20 In Chapter 8, we set out the step change we expect to see in how DNOs deliver DSO functions and services in RIIO-ED2. This will drive companies to more efficiently develop and use their network, considering flexible and other smart alternatives to network reinforcement, and ultimately support the delivery of net zero at the lowest cost to the consumer.

7.21 The availability of LV network data is a key enabler for DNOs delivering against the DSO baseline expectations. For example, access to more granular demand and voltage data will improve understanding of existing capacity on individual LV circuits, which will allow DNOs to produce enhanced forecasts. Better data and forecasting will also support DNOs in tendering for flexibility services on LV constraints.

7.22 While DNOs are proposing to achieve full network visibility by the end of RIIO-ED2, we recognise that a faster and more comprehensive rate of coverage will help bring forward the realisation of benefits. That is why we are proposing to include an outturn performance metric on network visibility customer coverage in a new DSO incentive framework that we are introducing in Chapter 4 of the Core Methodology Document.

Data and Digitalisation

7.23 The collection of network data provides the DNOs with the ability to be more strategic with their actions, leveraging key network insights to assist internal decision-making and modernisation of business processes. This modernisation, and improved decision-making, requires the development of new digital tools and services. These tools and services should be developed in accordance with stakeholder needs.

7.24 We are proposing to accept the DNOs' Business Plan proposals with respect to Data and Digitalisation, as we believe they deliver on the key strategic objectives of smart optimisation and consumer value. We also propose to introduce a Digitalisation re-opener to allow DNOs to provide the tools and services required for smart optimisation of the distribution networks during the price control period.

7.25 We outline our views on the DNOs' Business Plans with respect to Data and Digitalisation and outline our Data and Digitalisation policy approach to the RIIO-ED2 price control in Chapter 4 of the Core Methodology document. This section covers a subset of Data and Digitalisation investment associated with network planning and system operations.

7.26 As part of their DSAPs, DNOs have submitted proposals for Data and Digitalisation investments which interact with smart optimisation of the network, the key outcomes are:

- improvements to connection processes – DNOs are proposing improvements to connection processes, which will be achieved via leveraging monitoring data and development on new tools including self-serve connection tools to mitigate the forecast increase in connection volumes through RIIO-ED2 and RIIO-ED3
- advanced modelling approaches – DNOs are proposing the development of connectivity models, digital twins and forecasting tools. This will allow improvements to network and scenario planning, better contingency analysis and more robust Business Plans for future price controls
- in our view the new tools and processes that the DNOs propose to implement appear proportionate and should lead to better outcomes for consumers and stakeholders.

7.27 For effective functioning at a whole system level, transparency of operation is required at all levels of the network, and stakeholders need to understand the

format in which DNOs should provide network data. Ofgem has pushed for greater transparency through the Long-Term Development Statement (LTDS), requiring the LTDS to adopt the Common Information Model (CIM) as its data standard.[23] We intend to continue to utilise, where suitable, the CIM for network data exchanges required as part of LOs.

Load Related Expenditure (LRE)

7.28 Achieving net zero across the energy system will require a significant increase in investment in new low carbon infrastructure, both in generation capacity and upgrading our electricity networks. Doing so, at least cost to consumers, also requires any new investment to be delivered efficiently. This means making best use of existing network capacity and the various new smart and flexible technologies that are emerging, including through increased digitalisation of the sector. This approach will help ensure any new investment is made in the right place, at the right time, and at the right price.

7.29 LRE is a key building block of the RIIO-ED2 price control, ensuring the distribution networks are not a blocker to net zero while protecting consumers from the risks of overinvesting ahead of demand, particularly in the face of uncertain pathways to net zero (for example, in relation to the decarbonisation of heat). In our SSMD we set out that we expected DNOs to support long term whole system optimisation in how they responded to new demand, specifically by using flexibility in the first instance before considering traditional network investment. We consider that the LV monitoring rollout will be a key enabler of this due to the use of network visibility data and connectivity models to plan the expansion and reinforcement of the distribution networks.

7.30 The importance of network visibility for robust and transparent planning is reflected in the design of the LRE UMs. We are proposing a toolkit of UMs, including volume drivers, to enable DNOs to be responsive to changing demand.

7.31 We intend to put in place a range of controls, including a monitoring framework, to guard against inefficient use of these UMs. The framework aims to leverage the benefits of increased monitoring capabilities and ensure that there are clear indicators of justified investment. This should enable DNOs to mitigate the

[23] The Common Information Model (CIM) regulatory approach and the Long-Term Development Statement | Ofgem

uncertainties surrounding growth in demand and plan effectively on the LV networks.

7.32 While the focus of this section is predominantly on LV monitoring, network monitoring at all voltage levels is key to effective network planning and LRE investments. At higher voltages, we are proposing to use a re-opener to manage uncertain spend. Aligned with the controls for the volume driver, we expect DNOs to use network monitoring data[24] to plan effectively and evidence the need for additional allowances. This should include maximising the use of flexibility.

7.33 By emphasising the importance of network monitoring data within UM design, we should drive the DNOs to plan in a transparent and effective manner which complements the wider set of smart optimisation proposals.

7.34 Further information on the proposed uncertainty mechanisms and associated controls as well as our assessment of the LRE plans can be found in Chapter 3 of the Core Methodology Document.

Whole System Optimisation

7.35 As we look towards the middle and end of the decade, we need to ensure that the future network investment in the electricity distribution network is strategically planned on a whole system basis: maximising embedded zero carbon flexibility; considering interactions and implications with the wider energy system; and accounting for uncertainty and option value, while avoiding incremental approaches where this is likely to increase long term costs to consumers.

7.36 We recognise that protecting consumers depends increasingly on achieving optimised outcomes in our energy system and a whole system lens. There is a changing interconnection between different and changing energy vectors as the economy decarbonises. There is also a need to account for impacts of changes on other parts of the electricity system (eg the opportunities of given investment to allow a greater system benefit, rather than only to the networks).

7.37 Furthermore, the networks must enable others to develop policies and investment programmes and help ensure these are part of the lowest cost transition to net zero. There are an increasing number of stakeholders (local authorities, and in the

[24] At the higher voltages, network visibility is greater with an established framework, the Load Index (LI) in place for tracking changes in utilisation over time.

private sector) who need to take such decisions. These stakeholders need to understand both the existing network state but also future upgrade plans at a level of detail and locational specificity that can assist them. Providing tools that track the state of the network investments, but also set out the future plans and enable stakeholders to extract useful information will be a critical part of enabling the transition.

7.38 Given this, we are proposing to introduce a network whole systems LO as part of this price control. This will require DNOs to set out their investment plans in a localised and transparent way that is useful to stakeholders. It should set out how and when they make investment decisions in a whole system way on a practical level. We expect such considerations to include where demand-led network upgrades will occur, and where and how more strategically planned upgrades will occur. As part of the development of this licence condition, we will discuss with DNOs how digital tools could better enable this planning, specifically enabling communication of, and measurement of their strategic plan.

7.39 Further information on this obligation can be found in Chapter 4 of the Core Methodology Document.

8. Distribution System Operation arrangements

Introduction

8.1 In this chapter, we describe how the RIIO-ED2 price control will support the DSO transition to enable a smarter, more flexible and digitally enabled local energy system. This includes new arrangements for regulating and incentivising DSO functions, as well as measures to increase the adaptability of the price control to wider policy thinking in relation to changing roles and responsibilities. We also describe how, in parallel to setting the price control, Ofgem will continue to explore the value of alternative governance arrangements to help us meet Government's net zero goals.

Regulating DSO functions

8.2 A key objective of RIIO-ED2 is to support the delivery of net zero at the lowest cost to the consumer; and the efficient operation of the energy system at all voltages is essential if this vision is to be realised. Changes are required to the operation of electricity distribution networks to maximise the value of decentralised, local markets for flexibility services and to enhance the visibility of network data. DSO is the set of activities that are needed to support this transition to a smarter, more flexible and digitally enabled local energy system.

8.3 In RIIO-ED1, DNOs have increasingly performed a number of DSO functions and services across planning and network development, network operation and market development. These initiatives have helped flexibility markets in Great Britain to grow, with benefits to consumers arising from avoided and deferred network reinforcement. However, there is a lack of consistency in how different DNOs carry out these DSO activities, as well as a need to progress at greater pace to keep up with wider system developments. That is why in RIIO-ED2 we are:

- providing clarity on the baseline expectations for DSO roles and activities that all DNOs are expected to meet[25]
- assessing DSO strategies as part of the minimum requirements under the BPI
- setting efficient baseline allowances for DSO functions through our cost assessment process

[25] RIIO-ED2 Business Plan Guidance, Chapter 4 and Appendix 4 RIIO-ED2 Business Plan Guidance | Ofgem

- introducing the new DSO incentive (ODI-F) through which we will undertake an ex post review of DNOs' delivery of DSO activities.

8.4 The regulation of DSO functions will drive DNOs to more efficiently develop and utilise their network, considering flexible and other smart alternatives to network reinforcement. We set out our consultation position for the new DSO regulatory and incentive framework that we are introducing in Chapter 4 of the Core Methodology Document. Through the design of the DSO incentive, we are seeking to introduce a common approach to assessing DSO benefits which will help to ensure that their realisation is monitored effectively throughout the RIIO-ED2 period.

8.5 In the previous chapter, we set out how data visibility, especially on the LV network, is currently limited and that we propose to drive improvements through the new DSO incentive. We also recognise the importance of ensuring our proposals for automatic UMs for LRE, which are set out in Chapter 3 of the Core Methodology Document, do not risk weakening the incentives to use flexibility at the lower voltages. For this reason, our proposed new DSO incentive contains metrics and other reporting requirements to validate a DNO's commitment to considering flexibility as its most preferred option (when economically feasible) to address distribution network constraints across all voltage levels.

Changing roles and responsibilities

8.6 Our immediate priority is to ensure DNOs continue to develop DSO capabilities. However, we are conscious that as DSO functions evolve, we will need to consider whether there may be a case for greater separation of certain DSO activities from traditional DNO functions, or wider reforms to institutional arrangements at the distribution level.

8.7 Given this, we are putting in place measures to increase the adaptability of the price control to wider policy thinking in relation to changing roles, responsibilities, and governance arrangements. As part of the BPG for RIIO-ED2, we have:

- introduced a DSO baseline expectation that DNOs address actual and perceived conflicts relating to investment decisions on flexibility and traditional network solutions.[26] This supports DNOs having in place executive-

[26] RIIO-ED2 Business Plan Guidance, Chapter 4 and Appendix 4 RIIO-ED2 Business Plan Guidance | Ofgem

level accountability and board level visibility; clear and separate decision-making frameworks; and independent oversight such as external auditing

- included provisions around data publication and standardisation in the DSO baseline expectations to improve transparency of DSO functions and services.[27] This set the expectation that DNOs should ensure approaches are not "hard coded" so that only they can perform them in future, products are standardised wherever possible, and DNOs seek to enable third party provision
- required DNOs to identify costs associated with DSO roles in the Business Plan Data Templates, as well as provide a view in its Business Plan on the likely costs of conflict mitigation options, including legal separation, that were considered but not proposed.[28,29]

8.8 In parallel, we are undertaking a review of the institutional and governance arrangements needed to deliver the functions we consider are required at a sub-national level to achieve a timely and cost-effective net zero transition. In April 2022, we published a Call for Input that set out our understanding of the issues with existing institutional and governance arrangements, as well as the opportunities and risks of change, with a view to seeking feedback from stakeholders.[30]

8.9 Through the first half of this year, we have been compiling perspectives and evidence on the case for change to institutional and governance arrangements at a local level, as well as the reform options to be considered to address this. Over the second half of this year, we will focus on evaluating reform options, with a view to arriving at conclusions by early 2023. Depending on the conclusions, we may use the DSO re-opener, which we set out in Chapter 4 of the Core Methodology Document, to reassign costs and outputs if needed within the RIIO-ED2 period.

8.10 As part of our DSO reforms, we also need to clarify the role of DNOs in contestable markets to ensure that DNOs neutrally procure grid operational

[27] RIIO-ED2 Business Plan Guidance, Chapter 4 and Appendix 4 RIIO-ED2 Business Plan Guidance | Ofgem
[28] RIIO-ED2 Data Templates and Associated Instructions and Guidance https://www.ofgem.gov.uk/publications/riio-ed2-data-templates-and-associated-instructions-and-guidance
[29] RIIO-ED2 Business Plan Guidance, Appendix 4 RIIO-ED2 Business Plan Guidance | Ofgem
[30] Call for Input: Future of local energy institutions and governance https://www.ofgem.gov.uk/publications/call-input-future-local-energy-institutions-and-governance

services and facilitate the development of – and coordination between – flexibility markets.

8.11 In March 2022, we consulted on our minded-to position for the regulatory treatment in RIIO-ED2 of DNOs providing network voltage control services, via the remote management of deployed network assets, to the electricity system operator for its balancing services activities.[31] This service is commonly referred to as Customer Load Active System Services (CLASS).

8.12 As part of our decision, we propose to carefully consider what effective and appropriate measures need to be put in place to address actual or perceived conflicts of interest with respect to deployment of CLASS as a balancing service.

[31] Regulatory treatment of CLASS as a balancing service in RIIO-ED2 network price control (2022 consultation) https://www.ofgem.gov.uk/publications/regulatory-treatment-class-balancing-service-riio-ed2-network-price-control-2022-consultation

9. Approach to the Totex and Business Plan Incentive Mechanisms

Totex incentive mechanism

Overview of TIM outcome

9.1 The TIM is designed to encourage network companies to improve their efficiency in delivery and ensures that the benefits of these efficiencies are shared with consumers. It also provides some protection to consumers from any company overspend of their allowances as the cost of these overspends are shared with consumers.

9.2 In our SSMD, we said that the TIM would incorporate a confidence-dependent incentive rate, which is specific to each network company, and represents the proportion of any under- or overspends that the company is exposed to.

9.3 In line with the approach set out in our SSMD, we calculated a confidence metric for each network company as the ratio of high-confidence baseline costs to totex, where the aggregate efficient cost benchmark for high-confidence baseline costs is the numerator and the network company's overall totex allowance is the denominator.

9.4 We then calculated the incentive rate for each network company as follows:

Incentive rate (%) = [50% * confidence metric] + [15% * (1-confidence metric)]

Table 10 Proposed TIM incentive rates for each DNO[32]

DNO	Proposed TIM incentive rate
ENWL	50.0%
NPg	49.9%
WPD	50.0%
UKPN	50.0%

[32] Where there is more than one licensee per company, these are based on each network company's incentive rate weighted by allowed totex.

DNO	Proposed TIM incentive rate
SPEN	49.9%
SSEN	49.2%

Our approach to high and lower cost confidence assessments

9.5 This section sets out our approach to the assessment of confidence in baseline costs that were submitted by companies in their Business Plans. The results from our confidence assessments feed into the calculation of sharing factors for the TIM, which is discussed in the next section. They are also key for our assessment at Stages 3 and 4 of the BPI.

9.6 In our SSMD, we said that we would categorise baseline costs into two categories based on our confidence in our ability to independently set expenditure allowances in respect of those costs:

- high-confidence baseline costs are those costs for which we have a high level of confidence in our ability to independently set a cost allowance
- all other baseline costs would be categorised as lower confidence baseline costs.

9.7 We said that for high-confidence baseline costs, we would be able to set cost allowances using information that is substantially independent of cost forecasts provided by companies in their Business Plans. We also said that companies could put forward supporting information in their Business Plans that we would take account of as part of our assessment of confidence in submitted costs.

9.8 Our assessment of confidence has a material impact on each company's scope for being subject to penalties or rewards under BPI Stages 3 and 4 respectively:

- companies could be liable for penalties under BPI Stage 3 in respect of baseline costs that are categorised by us as lower confidence baseline costs
- companies could earn rewards under BPI Stage 4 in respect of baseline costs that are categorised by us as high-confidence baseline costs, provided they have passed BPI Stage 1. High-confidence costs do not attract a BPI Stage 3 penalty.

9.9 We believe that, in the case of high-confidence costs, there is no need to apply a BPI Stage 3 penalty. For high-confidence costs, there is limited value in

companies' cost forecasts as a benchmark for efficient costs. Moreover, the existence of independent benchmarks means that companies have little incentive to submit inefficient and high-cost forecasts, but instead have an incentive under BPI Stage 4 to submit their best and most efficient cost forecasts.

9.10 For lower confidence costs, we do not have independent cost benchmarks, and therefore the company cost forecasts are an important element of our cost assessment process. In the absence of independent benchmarks, we consider a BPI Stage 3 penalty is necessary to deter the submission of unreasonably high and poorly justified costs.

9.11 Separately, for each company, the share of high-confidence baseline costs in total baseline costs influences the sharing factor that we apply as part of our proposed TIM. The higher the proportion of high-confidence costs, the higher the incentive rate.

9.12 In line with what we said in our SSMD, our assessment of confidence is based on the extent to which we can independently set a cost allowance for companies. This ability could be based on a number of factors, including:

- the availability of independent benchmarks that we are able to rely on in reaching our view of costs
- the quality and suitability of supporting information provided by companies.

9.13 Our assessment of confidence is closely linked to the cost assessment tools that we have used in reaching our view of efficient costs, which in turn has informed the totex baseline allowances that we propose to set. In particular:

- where we have substantively relied on econometric benchmarking to determine efficient levels of costs, we have assessed those costs to be high-confidence cost
- where we have used other methods and tools to determine efficient levels of costs, we have undertaken our assessment of confidence at a more granular level.

9.14 Where we have used econometric benchmarking to support our cost assessment, we consider that our econometric models can produce high-quality cost benchmarks that are, in large part, independent of the cost forecasts submitted by individual companies. We have taken account of the following reasons in arriving at our view:

- econometric benchmarking is a well-established tool for cost assessment that has been used by regulators in the UK and elsewhere
- we have applied tests of statistical quality and robustness to our models and their results. The results of these tests give us confidence in the models' ability to provide high-quality cost benchmarks
- while we have used information provided by companies in their Business Plans as inputs to our models, much of this information is drawn from historical data submitted by companies as part of our annual reporting process. Data submitted through this process is covered by quality assurance processes
- any forecast data provided by companies that we have used is likely to have a limited impact on the benchmarks derived from our econometric models due to the number of companies and time periods included in our modelling.

9.15 Taking account of all these factors, we have come to the view that econometric benchmarks (where they can be used) give us a high degree of confidence in our ability to set cost allowances. Consequently, we have categorised all costs determined through econometric modelling as high-confidence costs.

9.16 Our assessments of confidence in costs where we have used other cost assessment tools are undertaken at a more granular level and are closely aligned with the cost assessments themselves.

9.17 Our approach to determining efficient costs in these cases are based on:

- an assessment of the efficient level of activity required to be delivered by the companies to meet their statutory and LO, and to deliver the outputs we have set for them as part of the price control
- an assessment of the efficient cost of undertaking the required level of activity as set out above.

9.18 We have assessed costs relating to activities as high-confidence if a) we have a high degree of confidence that the activity needs to, or will, be undertaken during the RIIO-ED2 price control period, and b) we have a high degree of confidence in our ability to estimate efficient costs of delivering that activity.

9.19 All costs that have not been assessed as high-confidence costs following our assessment are considered to be lower-confidence costs.

9.20 Where we have attached PCDs to costs, we may treat those costs as either high or lower confidence depending on the degree of confidence we have in our ability to

estimate efficient costs associated with those PCDs. Costs associated with PCDs are included in baseline totex allowances.

9.21 We have excluded from our confidence assessments costs associated with activities that we propose to fund through UMs, including re-openers, volume drivers and 'use-it-or-lose-it' allowances. There is significant uncertainty about the cost allowances that companies may eventually receive for these activities (if they are carried out), and we do not think it would be reasonable to use costs associated with such activities to determine upfront BPI rewards and penalties, or the confidence-dependent incentive rate under the TIM.

9.22 We have excluded all quality of service (QoS) costs from our assessment as we have made a policy decision not to award any of these costs. We discuss the rationale for our treatment of QoS costs in more detail in Chapter 7 of the Core Methodology Document.

The Business Plan Incentive

9.23 The BPI was developed to encourage network companies to submit ambitious Business Plans that contain the information Ofgem requires to undertake a robust assessment of the Business Plans. High-quality Business Plans are essential to enable us to have sufficient high-quality information to set the price control that delivers for consumers at a reasonable cost.

9.24 The BPI rewards companies where, in our view, their Business Plan represents genuine additional value for money compared to business-as-usual and provides information that helps us to set a better price control. In contrast, inefficient, lower quality Business Plans are subject to financial penalties.

9.25 In this chapter we provide an overview of company performance against the BPI, and details regarding our approach to the assessment of the Business Plans against the BPI. Further details on individual company performance are set out in the respective company annexes.

Overview of BPI outcomes

9.26 The proposed outcomes of the BPI are set out in Table 11 for all companies.

Table 11 Proposed outcomes of the BPI for all companies[33]

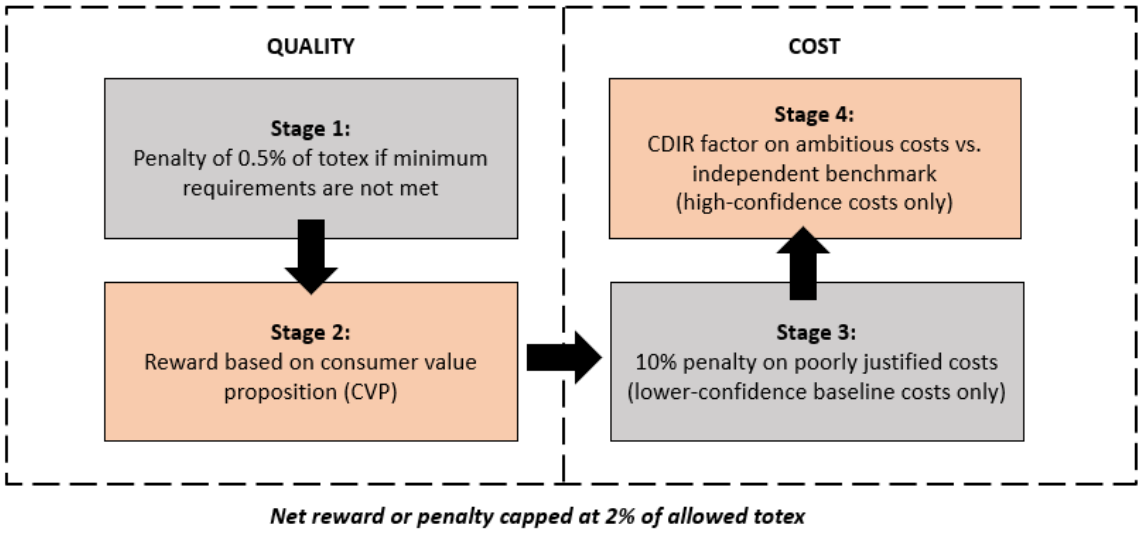
DNO	Stage 1	Stage 2	Stage 3	Stage 4	Applicable cap/collar (+/- 2% Totex)	Total Reward/Penalty (£m)
ENWL	No penalty	0	0	0	£35m	0
NPg	No penalty	0	0	0	£58m	0
WPD	No penalty	£3.6m	0	0	£121m	£3.6m
UKPN	No penalty	0	0	0	£102m	0
SPEN	No penalty	0	0	0	£64m	0
SSEN	No penalty	£2.8m	-£4.4m	0	£71m	-£1.6m

9.27 Our proposals set out in Table 11 reflect our overall view that the quality of information provided in Business Plans has broadly met expectations.

Four stages of the BPI assessment

9.28 The four stages of assessment under the BPI are set out in Figure 5 below.

Figure 5 Summary of the four stages of assessment under the BPI



[33] As with other financial incentives in RIIO-2, we propose to make separate tax adjustments so that the figures in the table represent the estimated financial impact on the company after paying corporation tax.

9.29 In our SSMD, we decided that for each company rewards and penalties (aggregated across all four stages of the BPI) are capped at 2% of our proposed totex allowances.

BPI Stage 1 assessment process

Background

9.30 The purpose of Stage 1 of the BPI is to incentivise the timely provision of adequate information within the Business Plans upfront, and to incentivise the network companies to submit Business Plans that contain the minimum necessary material to allow us to assess those plans. In our SSMD, we set out that if we find that a Business Plan has failed to meet the Stage 1 of the BPI, an upfront penalty of 0.5% of allowed baseline totex would be levied on the company. Where this is the case, the company would not be eligible for any reward under the BPI but can still be penalised under Stage 3.

Approach to assessment

9.31 We assessed each of the Business Plans against the minimum requirements specified in the BPG and against the completeness and quality criteria.[34] Alongside their plans, the DNOs were required to submit an index sheet indicating where in their Business Plans they had addressed each of the 75 listed minimum requirements.

9.32 A number of the 75 minimum requirements included subsections, amounting to over 100 requirements overall. We assessed whether a company had passed a minimum requirement at the level of the 75 requirements identified in the index sheet, including our assessment of any subsections in reaching our conclusion.

9.33 Our Stage 1 assessment of the Business Plan includes an assessment of the materiality of any failures of individual minimum requirements. Our materiality assessment considered:

- the number of minimum requirements that have been failed
- the extent to which our ability to set the RIIO-ED2 price control has been compromised by the failure(s) in question (for example, due to missing or incomplete information)

[34] RIIO-ED2 Business Plan Guidance, Paragraphs 8.7, 8.8 RIIO-ED2 Sector Specific Methodology Decision | Ofgem

- any consumer detriment that may be expected as a result of the failure(s) in question
- any other information relevant to the materiality of the failure(s) in question.

Consultation position

Table 12 Assessment against minimum requirements by company

DNO	Assessment against minimum requirements
ENWL	Not met enabling whole system solutions – evidence of impacts minimum requirement (BPG paragraph 4.30)
NPg	Not met explanation for redaction minimum requirement (BPG 2.9)
WPD	Not met: DSO Strategy minimum requirements (BPG 4.19) Enabling whole system solutions – overall approach and evidence of impacts minimum requirements (BPG 4.29-4.30) Index sheet minimum requirement (BPG 7.5)
UKPN	Minimum requirements met
SPEN	Not met KPIs to measure effectiveness of strategy and pay/reward structure minimum requirement (BPG 2.5)
SSEN	Not met: KPIs to measure effectiveness of strategy and pay/reward structure minimum requirement (BPG 2.5) Types of outputs and additional resourcing requirements minimum requirement (BPG 3.4) Summary table for outputs, uncertainty mechanisms and CVPs minimum requirement (BPG 7.9)

9.34 We have identified non-material areas where the Business Plans are not of satisfactory quality to be considered as meeting the minimum requirements for most of the DNOs. However, we consider these failures limited in number, materiality and scope. Following our overall assessment, we are satisfied these failures are non-material. On this basis, we are proposing that all Business Plans have passed Stage 1 of the BPI. See the section below for our detailed rationale for our BPI proposals for each DNO.

Rationale for consultation position

9.35 We assessed ENWL's Business Plan to have not met the minimum requirement relating to the costs, benefits, and value of proposed whole system activities (BPG 4.30). The reason is that ENWL have not (apart from for their Consumer Value Propositions (CVPs) in this area) provided costs, targets, proposed benefits, or cross-sector benefits for their whole system activities.

9.36 We assessed NPg's Business Plan to have not met the minimum requirement relating to a statement of redaction (BPG 2.9). The reason is that NPg did not publish an explanatory statement for redactions alongside its plan.

9.37 We assessed WPD's Business Plan to have not met the minimum requirements, relating to:

- submitting a DSO strategy (BPG 4.19). The reason it failed is that WPD did not provide enough detail on the proposed performance measures that would enable stakeholders and Ofgem to evaluate progress in the delivery of its DSO strategy and associated outcomes
- plans and processes for joint planning and effective adoption of whole system solutions, and the costs, benefits, and value of proposed whole system activities (BPG 4.29-4.30). The reason it failed is that WPD did not provide evidence of benefits or value for money in their proposed engagement and long term plans. It also did not provide quantified benefits for many of its proposed activities
- submitting an index sheet indicating where in its Business Plan it has addressed all of the minimum requirements (BPG 7.5). The reason WPD failed is that it submitted an outdated version of the sheet with incorrect references and, even where references were correct, the explanation for how a requirement had been met was not sufficiently clear in some instances.

9.38 We assessed SPEN's Business Plan to have not met the minimum requirement relating to a requirement to set out how the company intends to structure pay and reward within the organisation to achieve the delivery of outcomes (BPG 2.5). The reason is that SPEN's Business Plan did not make links to price control outcomes.

9.39 We assessed SSEN's Business Plan to have not met the minimum requirements relating to:

- setting out how the company intends to structure pay and reward within the organisation to achieve the delivery of outcomes (BPG 2.5). The reason is that

SSEN's Business Plan did not make links to price control outcomes or make explicit links to revenue adjustments

- requirements to set out its outputs and categorise them as ODIs, LOs or PCDs (BPG 3.4 and 7.5). The reason it failed is that SSEN's Business Plan was inconsistent in its categorisation and included a number of outputs that were not categorised according to the prescribed options, without clear explanation for the approach it took.

9.40 We consider that UKPN's Business Plan has met all of the minimum requirements set under Stage 1 of the BPI.

Outcome of BPI Stage 1

9.41 Following our assessment, we consider that all Business Plans have passed Stage 1.

9.42 Following a review of the materiality of the minimum requirements that ENWL, NPg, WPD, SPEN and SSEN were assessed to have not met, we consider that these are not sufficiently material to warrant failure against BPI Stage 1.

9.43 As part of our materiality assessment, we took account of the fact that the specific minimum requirements that had not been met had a low materiality for consumers in terms of cost allowances sought and a limited impact on the wider price control setting process.

9.44 With respect to WPD's failure to meet some of the minimum requirements for submitting a DSO strategy, we did not consider a lack of performance measures to have a material effect on our ability to develop the new DSO incentive framework and set allowances for reasonable and efficient costs.

Consultation questions

Q7. Do you agree with our view that all the DNOs have passed Stage 1 of the BPI?

BPI Stage 2 assessment process

<u>CVP requirements</u>

9.45 In the BPG, we set out our approach to the Stage 2 assessment. We outlined that we expected companies to provide evidence of the associated additional value to consumers provided by their CVP proposals. We stated we would only consider

well justified CVPs and provided further guidance on what we expect to see from companies in the BPG.[35]

9.46 We also identified various types of activities that could be included within a company's CVP proposal. However, we were clear that this list was not exhaustive and that CVP proposals related to the listed activities would not automatically lead to a reward under the BPI.

9.47 Based on our qualitative assessment, the DNOs could be eligible for a reward on the quality aspects of their plans, as revealed through the CVPs. Any reward is calculated based on the additional value the company's plan would generate for existing and future consumers, as well as consumers in vulnerable situations.

Assessment process

9.48 CVP proposals have been assessed following a consistent approach across companies and sectors based on the criteria listed in the BPG. Similar to the approach to bespoke outputs, we conducted an initial RAG assessment of each proposal, which was subject to a peer review. All proposals ranked amber or green at this initial stage were subject to a more detailed assessment.

9.49 We have reviewed the level of justification provided in the Business Plans for each proposal in accordance with our BPG. Matters we have considered in our qualitative assessment include the non-exhaustive list set out in the BPG.

9.50 As set out in the BPG, the size of the final reward received by the company is calculated by multiplying the net consumer value by the company's efficiency incentive rate, as set out in the company annexes.

Stage 2 assessment outcome

Company performance against the CVP

9.51 The DNOs put forward 24 CVP proposals in total. The total proposed value of the CVP proposals was in excess of £800m.

9.52 We propose that three proposals should receive rewards. Table 13 below provides a summary of outcomes.

[35] RIIO-ED2 Business Plan Guidance, Chapter 8, Paragraphs 8.12 – 8.24 RIIO-ED2 Sector Specific Methodology Decision | Ofgem

Table 13 CVP outcome by company

Licensee	CVP Outcome
ENWL	We propose that no reward is provided.
NPg	We propose that no reward is provided.
WPD	We propose a reward of £3.6m for WPD's proposal to offer 1.2 million PSR customers a bespoke smart energy action plan every two years.
UKPN	We propose that no reward is provided.
SPEN	We propose that no reward is provided.
SSEN	We propose a reward of £2.8m for two CVP proposals, to: improve biodiversity in the seas around its island communities help those most medically vulnerable with access to a battery backup, should supplies be interrupted.

9.53 We recognise the significant effort that companies made to prepare CVP proposals. However, as consumers ultimately fund any reward, we must be satisfied it provides net value to consumers. Where we do not propose that a CVP proposal receives a reward under Stage 2 of the BPI, overall we were not satisfied that the proposal provided sufficient evidence of the associated additional value to consumers.

9.54 We commend some of the activities proposed, and we have provided baseline funding for some of these to be delivered but without a reward. The overall outcome is presented in Table 14.

Table 14 Overall outcome for CVPs

DNO	Submitted	Accepted with reward	Accepted no reward	Rejected
ENWL	2	0	1	1
NPg	4	0	3	1
UKPN	3	0	1	2
WPD	6	1	3	2
SPEN	4	0	3	1

DNO	Submitted	Accepted with reward	Accepted no reward	Rejected
SSEN	5	2	1	2

9.55 We have provided further detail on the outcome of our Stage 2 assessment in the company annexes.

Proposed approach for treatment of CVP rewards

Consultation position

Table 15 Proposed approach for treatment of CVP rewards

Aspect of CVP	Consultation position
Reporting requirements	For all proposals that receive a CVP reward, we propose to introduce an annual reporting requirement regarding delivery status and require detailed reporting at close-out of RIIO-ED2.
Clawback	We propose to introduce an ex post clawback mechanism to recover a proportion of the reward in the event of non-delivery.
Submission of performance metrics	For all CVPs which we propose should receive a reward, we require submission of performance metrics from the relevant DNO as part of its consultation response, for us to consider ahead of Final Determinations. These should detail measurable activities or outputs the company will complete to deliver proposed consumer benefits.

Rationale for consultation position

Reporting requirements

9.56 We propose to modify the Regulatory Instructions and Guidance to introduce an annual reporting requirement for CVPs receiving a reward to monitor progress during the RIIO-2 period. We propose to provide a common reporting template, where companies will class each CVP's delivery status and provide a brief commentary.

9.57 We propose to require a more detailed report to be submitted to us during the close-out of RIIO-ED2. The structure of this report will be communicated to companies prior to close-out and it intends to demonstrate how companies have performed against their CVP outputs. It should relate to the metrics which

companies have submitted, and Ofgem has approved, as set out in the performance metrics section below. We will use this report to inform our ex post assessment.

Performance metrics

9.58 To allow us to assess if a CVP reward has been delivered at RIIO-ED2 close-out, we expect companies to provide clear performance metrics for all the CVPs we are proposing to reward, as part of their response to this consultation.

9.59 These metrics should be:

- based on specific measurable actions or outputs, rather than actual consumer benefit
- clearly related to the total reward, such that we can determine, if necessary, what proportion of the reward is subject to a clawback at closeout.

9.60 We will consider these submissions, and in Final Determinations will set out the outputs we will use to assess delivery of rewarded CVP proposals. If we are not satisfied that the proposed metrics will adequately inform whether and how to apply a clawback in the event of partial or non-delivery, we may decide the CVP proposal should not receive a reward. These metrics are key in order for us to evaluate if a CVP proposal has been satisfactorily delivered during RIIO-2.

9.61 These proposed metrics will be used to assess delivery of CVP proposals at RIIO-2 close-out. If a company believes that, due to changing circumstances, an activity or output no longer provides value to consumers, it should submit justification for this as part of the final RIIO-2 closeout report. It must also detail any alternative activity it undertook. Ofgem will then decide whether this alternative activity justifies the reward being maintained taking into account the same factors used to determine whether to provide a CVP reward in the first place.

Clawback for non-delivery

9.62 In our SSMD, we set out that the CVP reward may be clawed back where relevant. In the BPG, we stated that Ofgem would consider including a provision for clawback in the event CVP commitments are not delivered. Additionally, we stated that companies should, where appropriate, commit to returning any associated rewards in the event of non-delivery.

9.63 Some company proposals included a commitment to return some or all of a CVP reward in the event of non-delivery. There was not a uniform proposed approach in the proposals we received.

9.64 We propose that any CVP reward we determine the associated output to have not been fully delivered at close out of RIIO-2 will be recovered through an ex post clawback mechanism. The purpose of this clawback is to hold companies to account and ensure consumer value is delivered.

9.65 We propose to recoup only the proportion of the reward attributable to any CVP value which did not materialise. This will be informed by relevant considerations including the close-out report and performance metrics described above.

9.66 Each CVP reward will be considered individually, regardless of overall value and there is no stated minimum value that could be clawed back. If costs were awarded as part of a CVP proposal and are separable, these would also be subject to the proposed clawback mechanism. After a clawback decision has been made, we propose that any sum to be clawed back will be done by revising the revenue or totex inputs to the PCFM, and consequently a correction factor will be calculated for the available charge setting.

9.67 If net rewards for a company across the BPI at Final Determinations exceed 2% of its allowance and are therefore capped, we will not seek to claw back the entirety of the pre-cap reward that the CVP represents in the event of non-delivery. The intention is to avoid companies having a CVP reward clawed back that is not received in full. A company should not be left worse off than if had not submitted the proposal for an undelivered CVP.

Proposed approach for treatment of CVP proposals that do not receive a reward

9.68 In light of the nature of many of the CVP proposals submitted to us, we encourage the companies to deliver many of the activities as part of their business-as-usual activities.

9.69 Where we are proposing to provide for an activity through baseline allowances or another output, then we still expect the activity to be carried out, regardless of whether the CVP proposal was rewarded.

9.70 Where we are not proposing a CVP reward, we do not intend to require companies to report on delivery of the CVP proposal using the proposed reporting requirements above.

Consultation questions

Q8. Do you agree with our overall approach regarding treatment of CVP proposals?

BPI Stage 3 assessment process

9.71 In our SSMD, we stated we would review the forecasts for costs included in the companies' Business Plans and assess which of those costs were lower-confidence baseline costs. Following this assessment, where we considered such costs to be poorly justified, we would remove the costs from the companies' forecasts as part of our cost assessment process. Any costs that we assessed as lower confidence costs could be liable for penalties under Stage 3 of the BPI.[36] The size of any penalty would be 10% of the value of those poorly justified lower confidence baseline costs that we removed from companies' forecasts in their Business Plans.

9.72 For lower confidence costs, we arrived at our view of efficient baseline cost allowances for individual cost elements by combining:

- the company forecasts of the levels of activity to be carried out during the RIIO-2 period, less any activities that are removed or rejected for funding by Ofgem
- our view of the efficient costs of carrying out those activities.

9.73 Further details of how we have assessed efficient baseline cost allowances are set out in the company-specific annexes.

9.74 We determined the subset of the lower confidence costs removed by Ofgem from Business Plans that were poorly justified by companies. In reaching our view of costs that were poorly justified by companies, we have taken account of the information provided by the companies to support both the forecast levels of activity and the forecast costs of undertaking that activity. Further details of our assessment of the justification provided by companies are set out in the company specific annexes.

9.75 The amount of poorly justified lower confidence costs removed from the Business Plans across all categories of costs are aggregated, and a penalty rate of 10% is

[36] Lower-confidence costs are those where we do not have a high level of confidence in our ability to independently set a cost allowance, as explained more fully in our RIIO-ED2 SSMD Annex 2, Chapter 10 RIIO-ED2 Sector Specific Methodology Decision | Ofgem

applied to determine the amount of penalty, if any, under BPI Stage 3 for each DNO.

BPI Stage 4 assessment process

9.76 In our SSMD we stated we would review the forecasts for costs included in the companies' Business Plans and assess which of those costs were high-confidence baseline costs. Following this assessment, an upfront reward would be available to companies that submitted cost forecasts in their Business Plans that are lower than a benchmark that we would otherwise have used in setting the allowance.

9.77 In relation to high-confidence costs, we have developed our view of baseline allowances drawing on efficient cost benchmarks that we have developed through our cost assessment tools:

- where we have relied on econometric benchmarking, the cost benchmark is our estimate of the modelled costs (including relevant non-modelled costs), before applying ongoing efficiency adjustments, and after applying catch up efficiency and volume adjustments, and any other sectoral and regional adjustments that are described in the relevant annexes
- where we have relied on other cost assessment tools, the efficient cost benchmark is our estimate of efficient baseline costs before applying ongoing efficiency adjustments.

9.78 For high-confidence costs, we set baseline allowances using the lower of:

- the company forecast
- the efficient cost benchmark.

9.79 For the purposes of BPI Stage 4, we compared our efficient cost benchmarks against the cost forecasts submitted by companies in the Business Plans. We compared company forecasts of high-confidence costs and our efficient benchmarks at the level of individual cost categories for technically assessed costs. This means companies receive BPI Stage 4 rewards at this level, and these rewards are not offset by higher forecasts elsewhere in the plan.

9.80 Where applicable, BPI Stage 4 rewards are determined by applying the company specific sharing factors to the amount eligible for Stage 4 rewards. Where a DNO's cost forecasts in its Business Plan are lower than a benchmark that we would otherwise have used in setting the allowance, the difference is multiplied by the TIM incentive rate to calculate the Stage 4 reward to that DNO.

10. Increasing competition

10.1 In our SSMD,[37] we confirmed that we would look to extend the use of early and late competition in the RIIO-ED2 price control where it is in consumers' interest to do so. This chapter sets out our proposals for how early and late competition will feature within the ED2 package.[38]

Early competition

10.2 Our approach to Early Competition in the ED sector flows from the approach we have taken in the electricity transmission (ET) sector. We set out below how our Early Competition approach has developed and our current position.

10.3 Early competition refers to a competition to determine a solution to a need on the network that is run before detailed design of the preferred solution has been carried out. It encourages additional innovation in the design, delivery and operation of infrastructure. This should help ensure that solutions can be delivered quicker and at lower cost.

10.4 To facilitate instances where early competition may be appropriate, we decided[39] that DNOs must flag projects over £50m in value in their Business Plans. We also invited[40] DNOs to consider whether projects above this threshold are contestable (whether or not there are different potential solutions to a network problem). Our RIIO-ED2 BPG[41] also required DNOs to provide rationale for why it considers it may not be in the interests of consumers for early competition to be used for its flagged system needs/projects.

10.5 The Early Competition Plan (ECP) published by the Electricity System Operator (ESO) in April 2021[42] sets out the ESO's view on how an early competition tender process could work, and how it could be incorporated into the ET network planning process.

[37] RIIO-ED SSMD Annex 2, Paragraph 9.1 RIIO-ED2 Sector Specific Methodology Decision | Ofgem
[38] For other initiatives intended to increase competition in energy networks, see Consultation on our review of competition in the electricity distribution connections market | Ofgem and Chapter 4 of the Core Methodology Document
[39] RIIO ED2 SSMD Annex 2, Paragraph 9.24 RIIO-ED2 Sector Specific Methodology Decision | Ofgem
[40] RIIO-ED2 SSMD Annex 2, Paragraph 9.25 RIIO-ED2 Sector Specific Methodology Decision | Ofgem
[41] RIIO-ED2 Business Plan Guidance, Paragraph 5.55 RIIO-ED2 Business Plan Guidance | Ofgem
[42] ESO final Early Competition Plan, April 2021: https://www.nationalgrideso.com/document/191251/download

10.6 In our decision on early competition in onshore electricity transmission networks published in March 2022[43], we confirmed our view that the continued development of the arrangements to allow early competition in ET represents good value for money for consumers, and that the ESO should continue to develop the early model of competition.

10.7 In December 2021, the ESO noted, based on engagement with industry, that the model for early competition developed for ET did not appear to require modification for the ED sector. However, the ESO noted that modifications would be needed to the methodology for identification and selection of projects. The ESO also expects that changes to codes, licences and legislation would need to be of an equivalent nature for distribution as those required at transmission level.

10.8 Once the Early Competition Model is sufficiently developed in the ET sector, we will consider whether it is in consumers' interests for the model to be applied to the ED sector.

Late competition

10.9 On late competition, we confirmed in our SSMD[44] that we consider it is in the interests of consumers to be able to apply, where appropriate, the following models:

- the Competitively Appointed Distribution Owner (CADO)
- the Special Purpose Vehicle (SPV) Model
- the Competition Proxy Model (CPM).

10.10 In our SSMD, we also confirmed[45] that DNOs must flag projects over the £100m high-value criterion in their Business Plans and provide their assessment of these flagged projects against our criteria for late competition.

10.11 We decided[46] to apply criteria for identifying projects in the electricity distribution sector which we had also applied across the electricity transmission and gas sectors. These criteria are as follows:

- new

[43] Decision on early competition in onshore electricity transmission networks | Ofgem
[44] RIIO-ED2 SSMD Annex 2, Paragraph 9.55 RIIO-ED2 Sector Specific Methodology Decision | Ofgem
[45] RIIO-ED2 SSMD Annex 2, Paragraph 9.54 RIIO-ED2 Sector Specific Methodology Decision | Ofgem
[46] RIIO-ED2 SSMD Annex Paragraph 9.53 RIIO-ED2 Sector Specific Methodology Decision | Ofgem

- separable
- high-value: projects of £100m or greater expected capital expenditure

10.12 In our BPG[47], we also stated that, in presenting projects in their Business Plans, companies must consider and indicate whether our approach to applying 're-packaging' and 'bundling' would be appropriate for those projects[48].

Approach to assessment

10.13 In the Business Plans, no DNO identified any projects above £50m that they considered, based on our criteria, would be suitable for early or late competition.

10.14 We reviewed the DNOs' submissions explaining their view of projects and system needs, alongside their justification. We then undertook a review of HVP submitted by DNOs to consider whether they would meet our criteria, and whether applying competition would be in consumers' interest.

Consultation position

Table 16 Early and late competition

Parameter	Consultation position
Early competition	
Application of early competition model to projects funded in baseline allowances	We do not propose to apply early competition to any projects accepted for baseline funding.
Application of early competition model to projects eligible for re-openers	Once the Early Competition Model is sufficiently developed in the ET sector, we will consider whether it is in consumers' interests for the model to be applied to the ED sector.
Late competition	
Application of late model to projects funded in baseline allowances	We propose that it is not in consumers' interests to apply late models of competition to baseline funded projects.

[47] RIIO-ED2 Business Plan Guidance, Paragraph 5.51 RIIO-ED2 Business Plan Guidance | Ofgem
[48] For more information on our re-packaging principle see Page 22 of https://www.ofgem.gov.uk/publications/extending-competition-electricity-transmission-decision-criteria-pre-tender-and-conflict-mitigation-arrangements

Parameter	Consultation position
Application of late competition models to projects eligible for re-openers	All projects that meet the criteria for competition and are brought forward under a re-opener during RIIO-ED2 will be considered for delivery through a late competition model.
When we will make our decision on whether or not to apply a late competition model to projects eligible for re-openers	We will aim to reach our decision on individual projects as soon as practically possible alongside our assessment under the relevant re-openers.

Rationale for consultation position

10.15 We do not propose to apply early competition to any projects accepted for baseline funding. This is because key aspects of the early competition policy are still to be developed for the ED sector.

10.16 Once the Early Competition Model is sufficiently developed in the ET sector, we will consider whether it is in consumers interests for the model to be applied to the ED sector. If we consider it is, we will consult on our views, and on how early competition may interact with other processes, such as uncertainty mechanisms and the late model competition arrangements.

10.17 We propose not to apply late competition to any projects accepted for baseline funding either. This is because there were no stand-alone projects submitted that satisfy the late competition criteria of being new, separable, and of a value exceeding £100m. However, where such projects come forward under re-openers, we will consider whether these projects meet the criteria, and whether it is in consumers' interest to apply late competition. Network companies should develop projects in a way that avoids creating unnecessary barriers to these projects being delivered efficiently through a late competition model.

Consultation questions

Q9. Do you agree with our proposed position on early and late competition?

11. RIIO-ED2 in the round, post appeals review and pre-action correspondence

11.1 In this chapter, we seek to explain how different elements of the RIIO-ED2 price control relate to each other (interlinkages) and how our RIIO-ED2 price control package represents a balanced and fair settlement for consumers and licensees that should be looked at 'in the round'. In doing so, we hope to provide clarity for licensees and stakeholders on the overall RIIO-ED2 framework.

11.2 We also set out our consultation position on the post appeals review and pre-action correspondence.

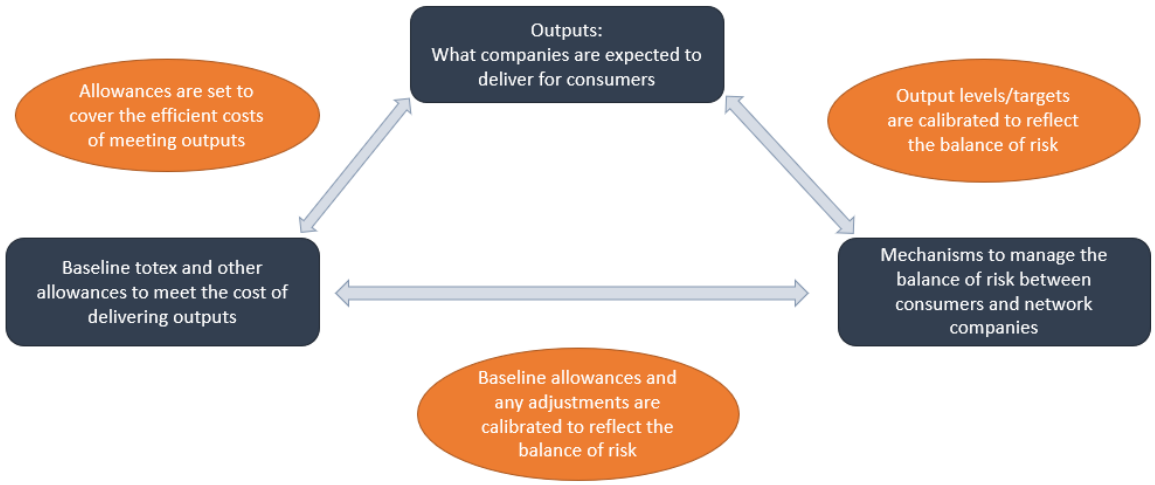
RIIO-ED2 in the round and interlinkages

11.3 RIIO-ED2 is a complex price control framework made up of interlocking decisions that come together to create an integrated price control package that delivers for consumers now and in the future, users of the distribution network and DNOs.

11.4 Our RIIO-ED2 price control package is a system made up of three distinct but closely linked pillars:

- outputs, which are the activities and outcomes that we expect the companies to deliver for consumers during the RIIO-ED2 period. This includes, but is not limited to, statutory obligations, PCDs, ODI targets, LOs and ongoing efficiency improvements
- expenditure allowances, which allow companies to recover the efficient costs of delivering those outputs for consumers through regulated revenues. This includes baseline totex allowances and other allowances that we set to meet the cost of delivering outputs such as Weighted Average Cost of Capital (WACC), ODI rewards and penalties, and uncertainty mechanism revenues
- uncertainty and other risk mitigating mechanisms to manage and maintain a fair balance of risk between consumers and companies. This includes, but is not limited to UMs, Real Price Effects (RPE) indexation, TIM sharing factor, BPI, and RAMs.

Figure 6 High-level overview of interlinkages between outputs, expenditure allowances, and uncertainty/other risk mitigating mechanisms



11.5 The intrinsic links between these three pillars mean that each of them affects and is affected by decisions taken in relation to the other two pillars. For instance, the amount of work that companies have to do to meet their obligations (ie outputs) influences the efficient levels of expenditure allowances and conversely the amount of money available through allowances determines the amount of work that can be undertaken.

11.6 Therefore, we recognise that in some cases, a change to a component that sits in one of these pillars may have an effect on the other pillars, and the impact this change has on the other pillars would need to be taken into consideration.

RIIO-ED2 in the round

11.7 When developing our consultation position for these Draft Determinations, we have considered whether our price control package taken 'in the round' represents a fair and balanced settlement for consumers and licensees. We have considered this by asking ourselves if we have satisfied two tests:

- The "notionally efficient licensee": looking across the package of outputs, allowances, ODIs and UMs, have we set the RIIO-ED2 price control such that a notionally efficient licensee is able to recover the costs of delivering its outputs and meeting its statutory obligations and LOs? Has our RIIO-ED2 package, in terms of design, adequately addressed the sources of outperformance within RIIO-ED1? Does our RIIO-ED2 package ensure that

licensees' allowances will adjust to meet changes in the external environment?

- The "equity and debt financeability" question: have we set the allowed return on capital so that the notionally efficient licensee is able to maintain an adequate level of credit quality and attract sufficient equity financing to meet its investment requirements and play its part in meeting the UK's net zero commitments?

Notionally efficient licensee

Approach to setting allowances and calibrating ODIs

11.8 We have undertaken an extensive and thorough cost assessment exercise to arrive at our best view (based on available information) of the costs of each licensee, operating efficiently, to meet its statutory obligations, operational business needs and the expectations of direct customers and wider stakeholders. In arriving at our final view on totex allowances, we have also sought to strike an appropriate balance between the interests of existing and future consumers.

11.9 We have undertaken an in-depth cost assessment based on the Business Plans submitted by the DNOs and supported by our toolkit approach to assessing the DNOs' expenditures. Our work includes quantitative and qualitative assessment, reviewing the narratives provided by the DNOs' and supporting evidence, including historical cost and performance data and company forecasts. We have done both comparative analysis between DNOs and company-specific assessment.

11.10 We believe that the introduction of the BPI and the confidence-dependent totex sharing factor provides additional confidence in the quality of the company forecasts and our ability to rely on these to determine efficient costs. The BPI enables DNOs to earn rewards for submitting high quality and ambitious Business Plans, and penalties to be applied for low quality Business Plans.

11.11 Additionally, our package of financial ODIs includes a combination of existing and new mechanisms designed to encourage licensees to innovate, while still delivering the outputs and quality of service that consumers and wider stakeholders want to see.

11.12 For incentives retained from RIIO-ED1, we have used historical performance to set challenging but achievable targets for licensees which challenge companies to go beyond their RIIO-ED1 performance. In the case of new ODIs, we have proposed

targets and rewards/penalties such that licensees and consumers are not exposed to undue risks. Where we have introduced penalty only ODIs, we have calibrated the minimum standard of performance to ensure that penalties are only applied where performance may be indicative of service failings.

11.13 We are confident that our ODI package taken in the round provides the appropriate level of financial incentives to licensees to deliver strong service outputs for consumers. We believe that an efficient licensee that responds well to our ODI package could earn rewards for delivering beyond baseline targets.

Mechanisms to ensure the notional licensee is able to recover uncertain costs within period

11.14 As part of our Draft Determinations, we propose to include mechanisms to allow for the notional licensee to recover uncertain costs within period where the external environment changes. These include, but are not limited to:

- re-openers and volume drivers: to adjust allowances in period, where we believe there is uncertainty in the external environment. We believe that these mechanisms will protect network companies from bearing unexpected costs in period
- RPE indexation: to adjust allowances to account for deviations between input price changes faced by licensees (as proxied by selected indices) and changes to the CPIH
- RAMs: to adjust returns to ensure fairness of RIIO-ED2 by protecting consumers and investors against ex post overall returns from DNOs deviating greatly from expectations.

11.15 We are of the view that these mechanisms offer protection against the risk that the outturn allowances are too low in period and will ensure that the notional licensee has sufficient allowances to prevent the degradation of the quality of service in period, should the external environment change.

Mechanisms to address systemic outperformance

11.16 Our proposed RIIO-ED2 package includes a range of policies and mechanisms which actively seek to address concerns that we had identified with the design of the RIIO-ED1 package that allowed excess returns at the expense of consumers. These include, for example:

- PCDs: we propose to introduce PCDs to ensure that allowances are linked to the delivery of outputs, thereby safeguarding consumers from harm caused by inefficient cancellation or deferral of funded work
- RPEs: allowances for RPEs are indexed to observable indices so that allowances better reflect company costs as they vary over the price control.
- Confidence-dependent totex sharing factors: in RIIO-ED2 we are proposing to set lower totex cost sharing factors (also referred to as TIM sharing factors) compared to RIIO-ED1 to more closely align with the level of confidence we have in our cost benchmark
- Balance of baseline funding vs UMs: we are proposing to fund a higher proportion of costs through UMs compared to RIIO-ED1. Through UMs, we have attempted to reduce the scope for outperformance arising from uncertainties in the need for and cost of work
- RAMs: allows for returns to be adjusted at close out in the event that DNOs outperform beyond our expectations when setting the price control.

Equity and debt financeability test?

11.17 We believe that the result of our financeability assessment, as set out in Chapter 5 of the Finance Annex, represents an in the round assessment that targets each notional company being judged as broadly of comfortable investment grade credit quality. We consider all networks are financeable on the basis of the notional capital structure taking account of the allowed costs, cost recovery and allowed returns proposed in these Draft Determinations.

11.18 We have reached this conclusion after performing updated financeability analysis based on these Draft Determinations. This involved an in the round assessment that targets each notional company being judged as broadly of comfortable investment grade credit quality. This included consideration of:

- financial projections from our financial model
- the implied Moody's methodology rating (as this is the most transparent and therefore replicable methodology of the three rating agencies)
- key ratios compared to stated agency guidance thresholds for ratings two notches above investment grade but without a hard requirement to always meet those guidance levels for every ratio, recognising the discretion that rating agencies have in applying those levels to their eventual ratings assessments
- the strength of other metrics and qualitative factors

- stress test results.

11.19 For financeability testing purposes, we have tested different possible totex scenarios (see Chapter 5 of the Finance Annex for full details). These illustrative scenarios do not represent forecasts or indications of re-opener allowances but are cases that could be considered, albeit dependent on several factors. As shown in Chapter 5 of the Finance Annex, the financeability results are robust to these scenarios.

11.20 As is set out in Chapter 3 of the Finance Annex, we have considered whether our decision would allow the licensees to attract equity finance. As described there, our three-step process for determining the allowed return on equity incorporates market information wherever it is available. We therefore believe that our decision would allow licensees to attract equity finance.

Conclusion of our RIIO-ED2 package in the round

11.21 Overall, we think that the component parts that make up our RIIO-ED2 pillars are appropriately balanced to ensure that the notional licensee will have sufficient, but not excessive revenues to finance its activities. We think that our price control taken in the round represents a good outcome and a fair deal for companies and their investors.

RIIO-ED2 Interlinkages

11.22 We provide several examples below in order to illustrate the nature of the interlinkage categories. The examples provided are not an exhaustive list of every way in which individual aspects of our overall price control decision may be linked to every other aspect. It would not be proportionate to attempt to do this here. Instead, we provide these examples to help licensees and other stakeholders to gain a better understanding of how our proposed price control comprises a number of interlinked elements.

Cost of Equity

Policy area	Interlinkages
Cost of Equity (CoE)	Financeability, RAMs, ODI package, expenditure allowances, capitalisation rates, depreciation, notional gearing

11.23 The assessment of the risks to investors for the purposes of determining a reasonable allowance for the cost of equity depends on a number of elements of the RIIO-ED2 package, including expectations for output delivery, expenditure allowances, calibration of incentive targets, approaches to determining financial rewards/penalties, and caps/collars.

11.24 Changes to these elements could affect the level of risk faced by companies, with a consequential impact on the assumptions that feed into our assessment of the cost of equity.

Cost of Debt

Policy area	Interlinkages
Cost of Debt (CoD)	Financeability, RAMs, ODI package, totex allowances, capitalisation rates, depreciation, notional gearing

11.25 There are interlinkages between cost of debt calibration and a) financeability, b) RAMs, c) ODI package, d) totex allowances e) capitalisation rates, f) depreciation and g) notional gearing. This is because one input into the cost of debt calibration exercise is an assumption as to how much debt companies will raise in the upcoming price control. This assumption is driven by forecast RAV growth (which is in turn linked to totex allowances, capitalisation rates and depreciation) and notional gearing assumptions.

11.26 Any material changes to totex allowances, notional gearing, depreciation or capitalisation therefore have knock-on effects on the cost of debt allowance calibration because it may materially change the amount of new debt assumed to be issued in RIIO-ED2. This could in turn have an impact on the forecast average costs of debt across the sector and therefore the appropriateness of the allowance calibration.

11.27 In extremis, if the package as a whole (including equity allowances, notional gearing or the overall risk and return balance) were changed very materially, this could lead us to a different assessment of the credit quality of future notional efficient operator debt. This may then require a reassessment of the calibration of the debt allowance.

Business Plan Incentive

Policy area	Interlinkages
Business Plan incentive (BPI)	TIM

11.28 The BPI itself comprises four stages and there are interlinkages between these four stages and other elements of the RIIO-ED2 package:

- Stage 1 involves an assessment of whether Business Plans are complete in meeting Minimum Requirements and are of a satisfactory quality. Business Plans that fail Stage 1 are not eligible for any rewards that may be available under Stages 2 and 4.
- Our assessment of cost confidence determines the proportion of costs that are assessed as part of Stage 3 and Stage 4. Costs assessed as high-confidence costs may be eligible for rewards under Stage 4. All other baseline costs are potentially subject to Stage 3 penalties. Additionally, the outcome of our cost confidence determines the TIM. Any potential changes to our confidence assessment after Draft Determinations will mechanistically impact our proposals for the TIM.

Real Price Effects

Policy area	Interlinkages
Real price effects (RPE)	CoE, financeability

11.29 Our proposals for RIIO-ED2 include an RPE indexation mechanism, which protects companies and consumers from the risks of material deviation of input price trends and CPIH. Changes to the level of risk protection offered by this mechanism could have an impact on our view of the risks to investors, and therefore our view of the appropriate cost of equity and financeability.

Ongoing efficiency

Policy area	Interlinkages
Ongoing efficiency (OE)	DSO and data and digital (smart optimisation)

11.30 We have identified interlinkages with our proposals for ongoing efficiency and the transformational change anticipated in the sector during RIIO-ED2. As part of our efficiency challenge for companies, we have considered the significant increase in data and digital spending associated with the transition to a DSO. We consider that this provides scope for more stretching ongoing efficiency improvements than that suggested by historical analysis alone.

11.31 We think there are strong links between the two, such that any easing of our ongoing efficiency challenge needs to be accompanied by a review of the funding of data and digital activities.

Return adjustment mechanisms

Policy area	Interlinkages
Return adjustment mechanisms (RAMs)	CoE, TIM, ODI package

11.32 The return adjustment mechanism thresholds and adjustment rates are calibrated relative to out or underperformances relative to cost of equity in combination with performance against the TIM and the ODI package.

11.33 We consider that if the RAM parameters change, we would need to consider whether the ODI package and the TIM are appropriately calibrated to provide protections for consumers, DNOs and investors against undue out or underperformance.

Approach to cost assessment

Policy area	Interlinkages
Approach to cost assessment	Wider output and uncertainty mechanism package

11.34 Our assessment approach is the result of a series of methodological decisions that relate to different aspects of cost assessment (eg, regional factor adjustments, selection of catch-up efficiency challenge), with the aim of carrying out a meaningful benchmarking exercise that reflects our view of DNOs' relative performances. As such, any methodological change would change the modelling outcome for all DNOs, and thus their baseline totex allowances.

11.35 More generally, our approach to cost assessment, specifically our approach to setting baseline totex allowances, has an impact on the wider output and uncertainty mechanism package that we expect the DNOs to deliver against.

11.36 We consider that if our approach to cost assessment changes, then we would need to consider the impact on outputs, and the overall balance between baseline totex allowances and uncertainty mechanisms.

Post appeals review and pre-action correspondence

11.37 In our SSMD, we decided that the post appeals review and pre-action correspondence proposals have merit for the same reasons provided in Final Determinations for the gas distributions and transmission sectors.

11.38 We continue to believe that the post appeals review has merit and that there are potential scenarios where it may be useful. While there are obvious and significant limitations in attempting to predict an uncertain future event, and we are unable to provide an exhaustive list, the proposal could apply in the following scenarios:

- The CMA quashes the decision(s) appealed and remits to Ofgem for reconsideration with a direction that Ofgem reconsider the decision and consider interlinkages; or
- The CMA quashes the decision(s) appealed, retakes the decision itself but directs Ofgem to consider interlinkages.

11.39 The above scenarios could occur in circumstances where the element of the price control that is successfully appealed is interlinked to other elements of the price control and the outcome of the appeal has a material impact on these other elements. A review would be conducted consistent with the final decision of the CMA on any appeal.

11.40 Save for material methodological errors which would be in the consumer interest to correct on a symmetric basis[49], we continue to consider that in general it would not be appropriate for Ofgem to modify the licences of non-appealing licensees following a successful appeal. By non-appealing, we mean a licensee that accepts their Final Determinations and does not appeal any aspect of our decision to the CMA.

[49] ie the material methodological error may be upside or downside.

11.41 We said that we would set out our proposals with respect to timings for the pre-action correspondence in our Draft Determinations.

Consultation position

Table 17 Consultation position on pre-action correspondence

Appeals	Consultation position
Pre-action correspondence and Final Determinations questions (FDQ) process	We expect any prospective appellant to use the FDQ process to signal any aspects of the Final Determinations that contain errors, particularly material methodological errors, so that we can seek to consider and potentially resolve any issues before we direct the licence modifications. More broadly, we expect licensees to engage with us and to give us advance notice of any appeal they are proposing to bring in pre-action correspondence at a sufficiently early stage after the publication of Final Determinations and ahead of the deadline for making an application for permission to appeal. That correspondence should explain their intention to appeal, and the elements of the RIIO-ED2 price control that they plan to appeal and why. This should include the scope of any such appeal including, in sufficient detail, the alleged errors, and why that particular component of the price control is wrong having regard to any interlinked aspects of the decision and by reference to the price control in the round.
Post Appeals review	No change in position from our SSMD. We provide further clarification on our expectations of how a post appeals review may take place above.

Rationale for consultation position

11.42 In its response to our open letter in 2019 and its Final Determinations in the GD&T2 appeals, the CMA noted that in terms of pre-appeal conduct, "active engagement is beneficial for all parties", noting that the CMA itself needs to resource for any appeals lodged.[50]

11.43 The CMA encouraged pre-appeal conduct as good practice and noted that behaviour which without good reasons makes case management more difficult, such as "appellants who fail to engage with the appropriate regulators and notify us and update us about their potential intentions to appeal", could be reflected in the assessment of conduct, when allocating costs, even for successful appeals.[51] They were of the view that pre-notification of an appeal should include the

[50] Paragraph 14 **Error! Hyperlink reference not valid.**
[51] Paragraph 12 CMA response to Ofgem letter on regulatory appeals - GOV.UK (www.gov.uk)

potential scope of any appeal, rather than being just a notification of its potential existence. We consider the correspondence should also cover the question of interlinkages between a decision appealed and linked aspects of the price control in light of the CMA's position that where "*there are … interlinkages described clearly by the regulator, we would encourage appellants to explain why the component under challenge is wrong having regard to the interlinked aspects of the decision*."

11.44 From our experience in the recent of the RIIO-GD&T2 appeals, where some prospective appellants sent pre-action correspondence (and substantively engaged in the FDQ process), this was successful in allowing the parties involved to resource appropriately, and we expect that it allowed us to narrow issues and, in some cases, to avoid appeal grounds entirely. This process demonstrated benefits to parties involved thereby reducing the overall burden and costs of appeals borne by the parties.

11.45 Given this, in line with our RIIO-GD&T2 determination, we expect any prospective appellant to send pre-action correspondence at a sufficiently early stage, between the publication of Final Determinations and ahead of the deadline for filing appeals. We would expect to receive this correspondence in the period between early December 2022 to early February 2023 - after the publication of Final Determinations and before we are due to publish a decision on the corresponding RIIO-ED2 licence conditions. We expect potential appellants to come forward to clearly explain their intention to appeal, the element(s) of the RIIO-ED2 price control that they intend to appeal, the scope of that appeal including, in sufficient detail, the alleged errors, and why that particular component of the price control is wrong having regard to interlinked aspects of the decision.

11.46 We also propose to run a Final Determinations question (FDQ) process following publication of the Final Determinations. The purpose of this process will be for licensees to ask clarification questions and to notify us of any errors, particularly any material methodological errors. We propose to use this process to identify any errors and to communicate with licensees the plan for correcting them. We would encourage licensees to use the pre-action correspondence and the FDQ process to allow for potential appeal grounds to be avoided or narrowed. We will draw the CMA's attention to the conduct of any licensee who fails to meaningfully engage with us in any subsequent appeal they may bring.

Consultation questions

Q10. Do you have any views on the proposed scope of the FDQ process and pre-action correspondence, including on the proposed timing for sending such to Ofgem?

12. Access and Forward-looking Charges Significant Code Review

12.1 We published our final decision on the Access and Forward-looking Charges Significant Code Review (Access SCR) on 3 May 2022.[52] The objective of the review is to ensure electricity networks are used efficiently and flexibly, reflecting users' needs and allowing consumers to benefit from new technologies and services, while avoiding unnecessary costs on energy bills in general.

12.2 As part of our final decision, we have directed changes to be made to the connection charging arrangements so that customers pay less towards the reinforcement of the existing network that is triggered by their connection request. This work will be funded through RIIO-ED2 allowances instead.

12.3 It is not clear how and to what extent consumers will respond to the changes. However, even in the absence of any further behavioural change, there will be an increase in DNOs' costs as work is funded through the price control that would otherwise have been borne by the connection customer. The Access SCR therefore introduces significant uncertainty in DNOs' forecasting of what investment will be needed in RIIO-ED2.

12.4 We had not published a final decision on the Access SCR at the time final RIIO-ED2 Business Plans were submitted. DNOs were therefore asked to take cognisance of the proposals as they were understood at the time, but not reflect them in baseline funding requests. We included additional memo tables within the Business Plan Data Templates to enable DNOs to identify additional costs associated with the Access SCR.

12.5 DNOs' best view of the potential impact ranged from £32.5m to £325.9m per DNO. Subsequent discussions have however revealed that DNOs have taken different approaches to assessing the impact which makes direct comparisons difficult. For the purposes of our Draft Determinations, the costs presented by DNOs were not on a consistent enough basis to be reflected in our baseline totex assumptions. If additional Access SCR costs are to be included in our baseline allowances, a resubmission of the Access SCR related costs is required. We will continue to work with the DNOs on how the impact of the Access SCR is reflected in RIIO-ED2. Ahead of Final Determinations we will consult, if required, on our

[52] Access and Forward-Looking Charges Significant Code Review: Decision and Direction | Ofgem

assessment of the resubmission and on how best to reflect Access SCR costs in RIIO-ED2.

12.6 We are not proposing a specific UM to manage the impact of the Access SCR above baseline allowances. This is because while the DNO is facing uncertain costs, whether the driver is the Access SCR or not, is largely irrelevant. What is important is that new network investment is needed. There are also practical challenges with identifying whether an investment would not have gone ahead in the absence of the Access SCR. We consider that our suite of proposed mechanisms for managing LRE uncertainty are an appropriate, and sufficiently robust, means of managing the uncertainty arising from the Access SCR.

Consultation question

Q11. Do you agree with our proposal to not introduce a specific uncertainty mechanism to manage the impact of the Access SCR (and address it through the LRE mechanisms instead)? Please explain why.

13. Outcome of Storm Arwen on RIIO-ED2

Introduction

13.1 Storm Arwen brought widespread disruption to the UK and resulted in over one million customers losing power. Approximately 40,000 customers were without supply for more than three days, and nearly 4,000 customers were off supply for over a week.

13.2 In light of the severity of the event and the long duration that many customers endured without power, we conducted a review of the DNOs' response to Storm Arwen. Our review focused on matters of compliance with statutory and LO; whether companies fell short of their customers' expectations; and wider regulatory considerations such as the use of price control funding and compensation arrangements. Our report into the incident, which was published in June 2022,[53] includes 20 recommendations to minimise the impacts of future severe weather events.

13.3 In parallel, the BEIS Secretary of State commissioned the Energy Emergencies Executive Committee (E3C) to undertake a similar review, which was published in parallel with Ofgem's.[54]

13.4 In this section we outline the arrangements we propose to introduce to the RIIO-ED2 framework to ensure any follow-on actions from these recommendations are duly implemented and funded.

Background

13.5 In our report we recognised that staff in all network companies worked hard in challenging circumstances to get customers reconnected. However, we found that there are lessons to be learned for all DNOs for future severe weather events. A summary of all 20 recommendations from our Storm Arwen review can be found in Annex A of our report.

13.6 The majority of these actions are relevant to all DNOs. 16 of the recommendations will be led by the E3C or industry, with Ofgem leading on the remainder.

[53] Storm Arwen Report | Ofgem

[54] Storm Arwen electricity distribution disruption review - GOV.UK (www.gov.uk)

13.7 17 of the 20 recommendations are due to be completed by 30 September 2022, ahead of the upcoming winter. The remaining recommendations are expected to be completed by 1 April 2023; before the start of RIIO-ED2.

13.8 However, some recommendations may require further work or could result in changes that will need to be factored into the RIIO-ED2 price control. A summary of these recommendations and the provisions that we are making is summarised below.

- Recommendation 1: DNOs and Ofgem should commission a review into how pole health is assessed, to identify changes that will improve pole condition reporting
- Recommendation 2: E3C should review current network infrastructure standards and guidance, including those for vegetation management and overhead line designs, to identify economic and efficient improvements that could increase network resilience to severe weather events
- Recommendation 4: E3C should put forward proposals for an outcome-focused resilience standard which could set Government and public expectations on restoration times during power outages
- Recommendation 5: DNOs should submit winter preparedness plans for 2022/23 to Ofgem by 30 September 2022. Ofgem will confirm the scope of this report by 30 August 2022 and set out how DNO winter preparedness plans fit within the RIIO-ED2 framework in its Final Determinations publication by 31 December 2022
- Recommendation 11: Ofgem should work with DNOs to develop additional reporting metrics for communication channels, such as websites, applications, and social media. Ofgem will confirm how these reporting metrics will fit within the RIIO-ED2 framework in its Final Determinations publication
- Recommendation 12: Ofgem should work with DNOs to review the incentive framework for customer service, in relation to call-backs, to ensure that it drives overall benefits for consumers.
- Recommendation 19: Ofgem to commission a review of the Guaranteed Standards of Performance (GSoP) for Severe Weather. This could result in removing/changing the compensation cap, the payment structure (eg introduction of inclining payments) or the thresholds for different storm categories.

13.9 We want to ensure that DNOs prioritise spending on resilience to severe weather and will be considering how to achieve that within the existing regulatory

arrangements, including the Network Asset Risk Metric (NARM) framework, which may include some new asset specific constraints. We think that recommendations 1, 2 and 4 could result in modifications to recommended clearances for overhead lines in relation to tree cutting, require DNOs to enhance their inspections for wooden poles around their networks or require DNOs to invest in capabilities which will result in quicker restoration times.

13.10 In response, we propose to include a re-opener in RIIO-ED2 specifically for Storm Arwen recommendations and follow-on actions. This will allow DNOs to request adjustments to their allowances, where they identify a change to the scope of work they expect to deliver, as a result of the E3C's or Ofgem's recommendations from the Storm Arwen review.

13.11 In relation to recommendations 5, 11 and 12, we intend to work with DNOs between the publication of Draft and Final Determinations to consider how these can be incorporated into our proposals for the vulnerability incentive (recommendation 5) and CSS incentive (recommendations 11 and 12) for RIIO-ED2.

13.12 In relation to recommendation 19, we think the level of interest in our review of the severe weather-related GSoPs could be significant, which could affect the timeframes within which any changes are delivered. As a result, we propose that this review is carried out separately to the RIIO-ED2 process and should align with our wider review of the GSoPs. We will undertake a statutory consultation before implementing any changes.

13.13 Table 18 below highlights where in our Draft Determinations documents, you can find more information on the provisions we are making in RIIO-ED2 to ensure our recommendations from the Storm Arwen review are duly implemented and funded.

Table 18 Storm Arwen Report Recommendations and proposed treatment in RIIO-ED2

Storm Arwen Report Recommendation	RIIO-ED2 provision	Further Detail
DNOs and Ofgem to commission a review into how pole health is assessed, to identify changes that will improve pole condition reporting.	Storm Arwen Re-opener	Storm Arwen Re-opener, Chapter 6, Overview document
The E3C should review current distribution and transmission network infrastructure standards and guidance, including those for vegetation management and overhead line designs, to identify economic and efficient improvements that could increase network resilience to severe weather events	Storm Arwen Re-opener	Storm Arwen Re-opener, Chapter 6, Overview document
E3C to put forward proposals for an outcome-focused resilience standard that could set Government and public expectations on restoration times during disruptions caused by severe weather.	Storm Arwen Re-opener	Storm Arwen Re-opener, Chapter 6, Overview document
DNOs should submit their winter preparedness plans for 2022/23 to Ofgem by 30 September 2022. We will confirm how DNO winter preparedness plans fit within the RIIO-ED2 framework in our Final Determinations document.	Vulnerability Incentive	Annual Vulnerability Report, Chapter 5, Core Methodology document
Ofgem and DNOs to develop additional reporting metrics for communication channels, such as websites, applications, and social media. We will confirm how these reporting metrics will fit within the RIIO-ED2 framework in our Final Determinations publication.	Broad Measure of Customer Service Incentive	Customer satisfaction survey, Chapter 5, Core Methodology document
Ofgem to review the Customer Satisfaction Survey (CSS) incentive, in relation to call-backs, and ensure that it drives overall benefits for consumers. We will confirm any changes to the RIIO-ED2 framework in our Final Determinations publication by 31 December 2022.	Broad Measure of Customer Service Incentive	Customer satisfaction survey, Chapter 5, Core Methodology document
Ofgem to commission a review of the Guaranteed Standards of Performance (GSoP) for Severe Weather. This could result in removing/changing the compensation cap, the payment structure	Guaranteed Standards of Performance for Severe Weather	Guaranteed standards of performance, Chapter 6, Core

Storm Arwen Report Recommendation	RIIO-ED2 provision	Further Detail
(eg introduction of inclining payments) or the thresholds for different storm categories.		Methodology document

14. Assessing the impact of our Draft Determinations

14.1 Across the full suite of Draft Determinations, we have set out the assumptions, reasoning and evidence used to inform these Draft Determinations proposals. The Impact Assessment Annex sets out our overall assessment of the impacts of our Draft Determinations proposals on consumers and network companies. This section presents a high-level overview of the key impacts.

14.2 The methodology applied for calculating these impacts is consistent with that used in the RIIO-ED2 Sector Specific Methodology Impact Assessment published in March 2021, with the analysis updated to reflect the proposals set out in these Draft Determinations and any changes from our SSMD assumptions.

14.3 Over the five-year RIIO-ED2 price control period, we expect our Draft Determinations proposals to deliver net benefits to consumers of over £1.3 billion, relative to the counterfactual. The dominant quantified effect arises from a resetting of the cost of equity to market rates, which drives a large transfer from investors to consumers, compared to the counterfactual.

14.4 The £1.3 billion net benefits to consumers value are lower compared to that assessed at SSMD stage. This reflects updated parameters for the cost of capital, totex allowances, incentive rates, and ongoing and benchmarking efficiencies.

14.5 Based on Draft Determinations proposals we have calculated that domestic consumers will see savings of £11 (2021/21 prices) a year/per household based on medium typical domestic consumption values, compared to the average bill in RIIO-ED1. Further detail can be found in Chapter 4 of the Impact Assessment Annex.

14.6 There are different ways consumer benefits can be calculated. In the Impact Assessment the values are expressed in Net Present Value (NPV) terms relative to the defined counterfactual. Elsewhere in our Draft Determinations publications we may use an alternative estimate derived from the net change in overall revenues in Draft Determinations relative to the RIIO-ED1 outturn positions.

Appendix 1 – List of Appendices

Index

Appendix 2 – List of consultation questions

1. Introduction

2. Strategic context and overall package

3. Quality of Service - setting outputs and incentives for RIIO-ED2

4. Ensuring efficient cost of service - setting baseline allowances

5. Ensuring efficient financing

6. Adjusting allowances for uncertainty

Q1. Do you agree with our proposal to introduce a new funding mechanism for PoLR activities?

Q2. What are your views on our two proposed options, and do you agree with our preferred option of a DRS?

Q3. Do you agree with our proposal to introduce a re-opener to deal with recommendations from the Storm Arwen review, our proposed trigger and re-opener window?

Q4. Do you agree with our proposal to maintain the RIIO-ED1 High Value Project mechanism and focus it on non-load related HVPs in RIIO-ED2?

Q5. Do you agree with our proposal to remove the RIIO-ED1 smart meter volume driver?

Q6. Do you agree with our proposed approach for a common materiality threshold being applied to RIIO-ED2?

7. Smart Optimisation

8. Distribution System Operation arrangements

9. Approach to the Totex and Business Plan Incentive Mechanisms

Q7. Do you agree with our view that all the DNOs have passed Stage 1 of the BPI?

Q8. Do you agree with our overall approach regarding treatment of CVP proposals?

10. Increasing competition

Q9. Do you agree with our proposed position on early and late competition?

11. RIIO-ED2 in the round, post appeals review and pre-action correspondence

Q10. Do you have any views on the proposed scope of the FDQ process and pre-action correspondence, including on the proposed timing for sending such to Ofgem?

12. Access and Forward-looking Charges Significant Code Review

Q11. Do you agree with our proposal to not introduce a specific uncertainty mechanism to manage the impact of the Access SCR (and address it through the LRE mechanisms instead)? Please explain why.

13. Outcome of Storm Arwen on RIIO-ED2

14. Assessing the impact of our Draft Determinations

Appendix 3 – Glossary

A

Allowed revenue

The amount of money that a network company can earn on its regulated business.

Annual Environmental Report (AER)

The report that the licensees provide each year of RIIO-ED2 to give an update on their progress in implementing the initiatives and commitments made in their Environmental Action Plan, and their efforts to reduce the environmental impacts of the network.

Asset stranding

Assets which have subsequently become either not used or underused as compared with initial expectations.

The Authority/Ofgem/GEMA

Ofgem is the Office of Gas and Electricity Markets, which supports the Gas and Electricity Markets Authority (GEMA or 'the Authority'), the body established by section 1 of the Utilities Act 2000 to regulate the gas and electricity markets in Great Britain.

B

Base revenue

For RIIO-ED2, our proposed definition of base revenue is a subset of overall revenue calculating in the price control financial model: fast-pot expenditure, non-controllable opex, RAV depreciation and return.[55]

Baseline Allowed Return

Our estimation, taking into account expectations, of the efficient return for debt and equity capital. Based on a weighted average of the pre-tax cost of debt and the post-tax

[55] Base revenue may have a different definition depending on the price control and context (such as the definition of "BR" in RIIO-1 special conditions, or the RIIO-GD&T2 price controls). In RIIO-ED1, it was the amount of revenue network companies were allowed to recover as set up front at the beginning of the price control. In RIIO-GD&T2, base revenue is a subset of overall revenue allowances similar to ED2 proposals but including equity issuance.

cost of equity, adjusted for ex ante expectations if any. The weighting uses notional gearing.

Basis Points ('bps')

Used in finance to express small changes in rates. One basis point is 0.01% or one hundredth of 1%. 50bps is 0.5%.

Benchmarking

The process used to compare a company's performance (eg its costs) to that of best practice or to average levels within the sector.

Bond

A type of debt instrument used by companies and governments to finance their activities. Issuers of bonds usually pay regular cash flow payments (coupons) to bond holders at a pre-specified interest rate and for a fixed period of time.

Business Carbon Footprint (BCF)

A measure of the total greenhouse gas emissions (in tonnes of CO_2 equivalent) caused directly and indirectly by the reporting company. Direct and indirect emissions sources are categorised into scope 1, 2 and 3 emissions.

Business Plan Data Template (BPDT)

A set of data templates that the electricity distribution network companies use when submitting their Business Plans to Ofgem.

Business Plan Incentive (BPI)

A RIIO-2 incentive to encourage companies to submit ambitious business plans. Business Plans will be assessed in four stages in terms of their cost and quality, with rewards available for business plans representing genuine value for money and which provide information that helps Ofgem to set better price controls. Inefficient, low quality plans may be subject to a financial penalty.

Business Support Costs

The indirect operating costs that are required to support the DNOs overall business, such as corporate governance arrangements.

C

Capital Asset Pricing Model (CAPM)

A theoretical model that describes the relationship between risk and required return of financial securities. The basic idea behind the CAPM is that investors require a return for the level of risk in their investment.

Capital expenditure (capex)

Expenditure on investment in long-term distribution and transmission assets, such as electricity distribution cables or overhead lines.

Capitalisation policy

The approach that the regulator follows in deciding the percentage of total expenditure added to the RAV (and thus remunerated over time) and the percentage of expenditure remunerated in the year that it is incurred.

Caps and collars

The limits on outperformance and underperformance payments for an ODI, respectively.

Catch-up efficiency

The efficiency challenge we set for less efficient companies to "catch-up" with the most efficient ones.

Climate Resilience

The ability to anticipate, prepare for, and respond to hazardous events, trends or disturbances related to climate.

Closely Associated Indirects

These costs include the back-office functions directly involved in the construction and operation of the network assets, such as project management and network design.

Common Evaluation Methodology (CEM)

In 2020 the Open Networks Project initiated a product to develop a common methodology, to be used by DNOs, for evaluating the intervention options to solve an identified network meet. This product was managed under Workstream 1A and was initially titled the Active Network Management (ANM) vs Flexibility vs Reinforcement

Common Methodology as the aim of the product was to develop a tool that could evaluate alternative options like flexibility or ANM against traditional reinforcement. The developed approach and the tool have been renamed as the Common Evaluation Methodology (CEM) and Tool.

Common Network Asset Indices Methodology (CNAIM)

A common framework of definitions, principles and calculation methodologies that apply to the DNOs for the assessment, forecasting and regulatory reporting of asset risk.

Company Specific Factors

The additional costs associated with operating a particular DNO's network.

Competition and Markets Authority (CMA)

A non-ministerial government department in the UK that considers regulatory references and appeals, conducts in depth inquiries into mergers, markets and aspects of regulation of the major regulated industries.

Competition Proxy Model (CPM)

The CPM is one of the late competition models that may be applied to projects that meet the Criteria for late competition during RIIO-ED2. Under the CPM, Ofgem would utilise relevant benchmarks from other regimes, alongside other market information, to set a project-specific revenue for the incumbent network licensee that we consider would have eventuated from an efficient competitive process for construction and long-term operation (25 years) of a project.

Competitively Appointed Distribution Owner (CADO)

The late CADO regime is one of the late competition models that may be applied to projects that meet the Criteria for late competition during RIIO-ED2. Under late CADO build, a 'preliminary works party' (most likely a network company's licensee) would complete all necessary preliminary works for a new, separable and high value project. Ofgem or another appropriate party would then run a tender to determine a CADO responsible for construction and operation of the project. The CADO would bid a 'tender revenue stream' to construct, own and operate the asset for a long-term operational period (currently expected to be 25 years). CADO is the same premise as the Competitive Appointed Transmission Owner (CATO) but applied in the distribution sector.

Consumer

Within the regulatory framework we consider consumers to be the end users of gas and electricity, whether for domestic or business use.

Consumer Prices Index (CPI/CPIH)

The CPI is an aggregate measure of changes in the cost of living in the UK. It differs from the RPI in that it does not measure changes in housing costs and mortgage interest repayments – whereas the RPI does. CPI and RPI are calculated using different formulae, and have a number of other subtler differences. CPIH includes a measure of owner-occupiers' housing costs.

Consumer Value Proposition (CVP)

Consumer Value Proposition is Stage 2 of the Business Plan Incentive, where a DNO could bid for reward by demonstrating the additional value its business plan will generate for existing and future consumers and consumers in vulnerable situations.

Coordinated Adjustment Mechanism (CAM)

A whole system focused re-opener to protect consumer interests by supporting the reallocation of project revenues and responsibilities to the network best placed to deliver the relevant projects.

Corporation tax

A UK tax levied on a company's profits.

Cost of capital

The cost of capital is the combined cost of debt and cost of equity.

Cost of debt

The effective interest rate that a company pays on its current debt. Ofgem calculates the cost of debt on a pre-tax basis with reference to a trailing average index of debt costs.

Cost of equity

The rate of return on investment that is required by a company's shareholders. The return consists both of dividend and capital gains (ie increases in the share price). Ofgem calculates the cost of equity on a post-tax basis.

Credit rating

An evaluation of a potential borrower's ability to repay debt. Credit ratings are calculated using a number of factors including financial history and current assets and liabilities. There are three major credit rating agencies (Standard and Poor's, Fitch, and Moody's) who use broadly similar credit rating scales, with D being the lowest rating (highest risk) and AAA being the highest rating (negligible risk).

Criteria for late competition

The criteria used to identify projects that may be suitable for late model competition across all sectors. These criteria are as follows: new; separable; high-value projects of above £100m expected capital expenditure.

Curtailment

Curtailment refers to a network user's ability to import or export from the network being restricted ie the network user's access to the network is said to be curtailed. Typically, applicable to generator export but can be applied to demand from large industrial sites. Under defined arrangements this is a temporary reduction, typically in the allowed exports from a generator, below a customer's agreed export capacity. Activated in response to a notification or signal that the generator is required to curtail its generation.

Customer Engagement Group (CEG)

As part of the RIIO-ED2 enhanced engagement process, each DNO undertook a programme of research and engagement to inform its business planning and established an independent CEG. These groups challenged the DNOs to develop business plans that address the needs and preferences of their stakeholders and provided Ofgem with a public report on their views and the business plans.

Customer Interruptions (CIs)

A measure of the number of customers, per 100 connected customers, that are interrupted on a DNO's network over the course of a year. For example, 50 customers interrupted out of a total of 100 connected customers would result in a CI of 0.5.

Customer Minutes Lost (CMLs)

A measure of the average number of minutes a customer is without power over the course of a year, per 100 customers. For example, if 50 out of 100 customers are without supply for 10 minutes in a year, this would result in a CML of 5.

D

Data Best Practice

A set of principles that ensures data is treated as an asset and used effectively for the benefit of consumers, stakeholders, and the public interest. These principles are outlined in Ofgem's Data Best Practice guidance document.

Deadband

A specified range of performance levels where the ODI underperformance or outperformance payment is zero.

Decarbonisation

In a network price control context, the role of network operators in facilitating the reduction or removal of carbon dioxide emissions from energy and other sectors of the economy, eg transport.

Depreciation

A measure of the consumption, use or wearing out of an asset over the period of its economic life.

Digitalisation Strategy and Action Plan (DSAP)

Requirement for networks to produce digitalisation strategy documents and action plans outlining their vision for digitalisation and their order of activities leading to this vision respectively.

Distributed generation (DG)

Any generation connected directly to the local distribution network, as opposed to the transmission network, as well as combined heat and power schemes of any scale.

Distribution Network Operators (DNOs)

A DNO is a company that operates the electricity distribution network, which includes all parts of the network from 132kV down to 230V in England and Wales. In Scotland 132kV is considered to be a part of transmission rather than distribution so their operation is not included in the DNOs' activities. There are 14 DNO licensees that are subject to RIIO price controls. These are owned by six different groups.

Distribution System

The system of low voltage electric lines and low-pressure pipelines providing for the transfer of electricity and gas within specific regions of GB.

Distribution System Operation

The set of activities that are needed to support the transition to a smarter, flexible and digitally enabled local energy system. DNOs have been building capabilities in planning, operating and market facilitation of flexible resources to drive more efficient development and use of the decarbonising electricity system. This differs from the more traditional responsibility of a DNO, which is to take power from the transmission network and deliver it at safe, lower voltages to homes and businesses.

Disaggregated Cost Assessment

Cost assessment undertaken for individual activities, or small pools of closely related activities, enabling a more focused analysis of cost drivers.

Distribution Use of System (DUoS)

DUoS is a cost paid by suppliers to DNOs for the building and maintenance of the local distribution network. Suppliers then pass this DUoS charge on to energy consumers.

E

Economic life

The period over which an asset performs a useful function.

Electricity System Operator (ESO)

The entity responsible for operating the electricity transmission system and for entering into contracts with those who want to connect to and/or use the electricity transmission system. National Grid Electricity System Operator Limited is the electricity system operator in Great Britain.

Embedded Carbon

All the CO_2 emitted in producing materials. It's estimated from the energy used to extract and transport raw materials as well as emissions from manufacturing processes.

Energy Networks Associated (ENA)

The Energy Networks Association represents the companies which operate the electricity wires, gas pipes and energy system in the UK and Ireland.

End-use energy efficiency

A reduction in the amount of energy required to provide equivalent energy services to consumers. For example, loft, cavity wall insulation and double glazing allows a building to use less heating and leads to a reduction in base heat demand.

Environmental Action Plan (EAP)

These are DNO plans to address the impacts of their business and network activities on the environment and set out their commitments to addressing these impacts. These plans are required to be submitted with the DNOs' business plans.

Engineering Justification Paper

A decision support tool to provide justifications for investments, which is open to scrutiny and challenge.

Equity beta

The equity beta measures the covariance of the returns on a stock with the market return. The weaker this covariance, the lower the return that investors would require on that stock.

Equity risk premium

A measure of the expected return, on top of the risk-free rate, that an investor would expect for a portfolio of risk-bearing assets. This captures the non-diversifiable risk that is inherent to the market. Sometimes also referred to as the Market Risk Premium.

Ex ante

Refers to a value or parameter established upfront (eg at the price control review to be used in the price control period ahead).

Ex post

Refers to a value or parameter established after the event (eg following commencement of the price control period).

Exceptional Event

A circumstance beyond a DNO's control which, subject to the relevant thresholds being met/exceeded, results in an adjustment to the DNO's IIS performance. There are two types of exceptional event: a Severe Weather Exceptional Event (SWEE) and an Other Exceptional Event (OEE).

F

Fast money

Fast money allows network companies to recover a percentage of total expenditure within a one-year period with the rest being capitalised into the RAV (slow money).

Financeability

Financeability relates to licence holders' ability to finance the activities which are the subject of obligations imposed by or under the relevant licence or legislation. Financeability is assessed using a range of different qualitative and quantitative measures, including financial ratios.

Flexibility

The ability to modify generation and/or consumption patterns in reaction to an external signal (such as a change in price, or a message).

Fluid Filled Cables

Pressurised fluid filled underground cables.

Frontier Shift

The rate at which a company at or close to the efficiency frontier can change its outputs relative to inputs.

Fuel poverty

In England, a household is considered to be fuel poor if it has above-average required fuel costs, in circumstances where, if it were to spend the amount needed to meet its energy needs fully, it would be left with a residual income below the official poverty line.

As part of its new Fuel Poverty Strategy for England, the Department for Business, Energy and Industrial Strategy has consulted on amending this definition to refer to

households living in a property with an energy efficiency rating of Band D, E, F or G, where disposable income after housing and energy costs is below the poverty line.[56]

In Wales, a household is considered to be fuel poor if it would have to spend more than 10% of income to maintain a satisfactory heating regime.

In Scotland a household is considered to be fuel poor if, after having paid its housing costs, it would need more than 10% of its remaining net income to pay for its reasonable fuel needs and, having paid for its reasonable fuel needs, its childcare costs and its housing costs, this then leaves the household unable to maintain an acceptable standard of living.

Future Energy Scenarios (FES)

The FES are developed annually by the ESO to represent a range of different, credible ways to decarbonise the energy system.

Future System Operator (FSO)

In July 2021 BEIS and Ofgem launched the FSO consultation and subsequently confirmed the decision to create an independent FSO in April 2022.

The FSO will take on all the main existing roles and responsibilities of National Grid ESO and the longer-term planning, forecasting and market strategy functions in respect of gas (but not real-time gas system operation or Network Emergency Coordinator functions).

G

Gas Distribution Networks (GDNs)

GDNs transport gas from the National Transmission System to final consumers and to connected system exit points. There are eight network areas managed by four companies that are subject to RIIO price controls.

Gearing

A ratio measuring the extent to which a company is financed through borrowing. Ofgem calculates gearing as the percentage of net debt relative to the RAV.

[56] Fuel poverty strategy for England - GOV.UK (www.gov.uk)

Gilts

A bond issued by the UK government.

Groups

The RIIO-ED2 Challenge Group (CG) and Customer Engagement Groups (CEGs).

H

Headroom

A term in finance related to borrowing which has different meanings in different contexts. Here we use it to mean the safety margin of a borrower.

High-confidence baseline costs

Costs included in baseline totex allowances or forecasts for which Ofgem has a high level of confidence in its ability to independently set a cost allowance. See also 'Lower-confidence baseline costs'.

I

Indexation

The adjustment of an economic variable so that the variable rises or falls in accordance with index movements (eg inflation indices, bond indices).

Inflation index

This is a measure of the changes in given price levels over time. Common examples are the Retail Prices Index (RPI) the Consumer Prices Index (CPI) and the Consumer Prices Index including housing costs (CPIH), which are all measures of the aggregate change in consumer prices over time.

Interconnector

Equipment used to link electricity or gas systems across borders.

Intermittent generation

Electricity generation technology that produces electricity at irregular and, to an extent, unpredictable intervals, eg wind turbines.

Interruption

A loss of electricity supply lasting 3 minutes or longer.

Interruptions Incentive Scheme (IIS)

An incentive on DNOs to improve overall the reliability of their networks by reducing the number and duration of interruptions. It sets target levels of performance for DNOs to achieve; rewards are provided for DNOs who beat their targets, and penalties apply for DNOs who fail to achieve their targets.

L

Licence conditions

These are the conditions under which a licensee holds its licence to operate as a gas transporter or electricity transporter and address various detailed matters including requirements to meet certain standards of performance, how the company's allowed revenue is to be calculated and procedures for modifying various documents.

Licence obligations (LO)

This is one of the RIIO building blocks, an output that is contained within the licence conditions of a network company. The Authority has the power to take appropriate enforcement action in the case of a failure to meet these obligations.

Load Related Expenditure

The investment required to ensure the network has sufficient capacity to accommodate the load on it.

Load Index (LI)

A framework for collating information on the utilisation of the distribution assets supplying each demand group and for tracking changes in their utilisation over time.

Losses

A measure of the difference between units entering and units exiting the DNO network through different connection points.

Low carbon technology (LCT)

Low carbon technology is the term given to technologies that emit low levels of CO_2 emissions, or no net CO_2 emissions. Examples of LCTs include electric vehicles and heat pumps.

Lower-confidence baseline costs

Costs included in baseline totex allowances or forecasts that are not High-confidence baseline costs. See also 'High-confidence baseline costs'.

LV Services

The service line from the LV distributing main to the DNO's protection device situated upon the customer's premises. It does not include the joint and associated components connecting the service line to the distributing main.

LVSSA

A small low voltage demand connection to single premises, involving a single-phase connection and no significant other work.

LVSSB

A low voltage demand connection, where the scheme requires i) more than one but less than five single-phase connections at domestic premises ii) fewer than five single-phase connections at domestic premises and an extension of the existing network, or iii) single premises requiring a two-phase or three-phase connection.

M

Major Connections

Major Connections refers to connections at higher voltage levels and relates to connections undertaken in the Relevant Market Segments. See also 'Relevant Market Segments' definition in this annex.

Market to Asset Ratios (MAR)

The MAR represents the ratio between the market enterprise value, ie the market valuation of a company, of a regulated network and its regulatory asset value (RAV).

Minor Connections

Minor Connections refers to connections at lower voltages and related to customers requiring single service low voltage demand connections (LVSSA) and small project demand connections (LVSSB). See 'LVSSA' and 'LVSSB' in this glossary for more detail.

N

Network Asset Risk Metric (NARM)

The framework for which monetised risk outputs are calculated for NARM asset interventions.

Net Present Value (NPV)

NPV is the discounted sum of future cash flows, whether positive or negative, minus any initial investment.

Net Zero Advisory Group (NZAG)

A group set up by Ofgem that is intended to strengthen strategic coordination among key government departments and public sector organisations involved in the energy system transition, including around the heat, power, and transport sectors.

Network charges

These are charges recovered for the use of network services.

Network Company

A transmission network owner or distribution network operator. The ESO does not fall under this term, see the term Electricity System Operator (ESO).

Network Innovation Allowance

A use-it-or-lose-it allowance to fund small innovative projects focused on the energy system transition and vulnerable consumers.

Network Operating Costs

The day-to-day costs incurred by DNOs as part of the work required to maintain and operate the distribution networks.

Network Options Assessment (NOA)

The NOA is the process for assessing options for reinforcing the National Electricity Transmission System (NETS) to meet the requirements that the Electricity System Operator (ESO) finds from its analysis of the FES.

Network users

Companies along the gas and electricity supply chain (ie producers and generators, transmission and distribution network companies, and energy suppliers) and consumers.

Network Visibility

The ability of DNOs to collect and utilise data related to the operation of their network in planning and operational timescales.

Network-wide Peak Demand

The gross peak demand of the distribution network in the regulatory year measured in megawatts.

Non-controllable costs

Costs incurred by DNOs that are deemed to be outside of management control.

Non-Load Related Capex

The replacement or refurbishment of assets which are either at the end of their useful life due to their age or condition, or need to be replaced on safety or environmental grounds.

Non-op Capex

The capital costs incurred from activities that are unrelated to core activities, but essential to DNOs in being able to carry out these activities.

Normalisation

A part of the cost assessment process undertaken by Ofgem aimed at making any necessary adjustments to company submitted data to ensure they are consistent across all DNOs. These adjustments generally fall into the following categories:

- Regional factors
- Company-specific factors
- Exclusions

- Other adjustments

Notional company/business

A hypothetical, but typical, network company.

O

Offshore transmission

The majority of offshore generation will be connected to the electricity grid through offshore transmission cables. Offshore transmission is defined as being any offshore transmission network that operates at 132kV or above.

Offshore Transmission Owners (OFTOs)

OFTOs operate and maintain the offshore transmission assets.

Ongoing Efficiency

The reduction in the volume of inputs required to produce a given volume of output - ie the productivity improvements that we consider even the most efficient company is capable of achieving.

Operating Expenditure (opex)

The costs of the day-to-day operation of the network such as staff costs, repairs and maintenance expenditures and overheads.

Outputs

Services, requirements, and deliverables that network companies are funded or incentivised to deliver through the price control. These can be LOs, ODIs or PCDs. Common outputs apply to all or some of the energy sectors, whereas bespoke outputs apply to one network company.

Output Delivery Incentives (ODIs)

In RIIO-ED2, ODIs will apply where service quality improvements beyond a level that is funded through base revenues may be in the interests of consumers. ODIs can be financial (ODI-F) or reputational (ODI-R).

P

Pass-through (of costs)

Costs for which companies can vary their annual revenue in line with the actual cost, either because they are outside network companies' control or because they have been subject to separate price control measures.

Price control

The control developed by the regulator to set targets and allowed revenues for network companies. The characteristics and mechanisms are developed by the regulator in the price control review period depending on network company performance over the last control period and predicted expenditure (companies' business plans) in the next.

Primary Network

Network assets where the primary voltage is EHV or above (EHV refers to voltages equal to or greater than 22kV but less than 132kV).

Price Control Deliverables (PCDs)

In RIIO-ED2, we will use PCDs to capture those outputs that are directly funded through the price control and where the funding provided is not transferrable to a different output or project. The purpose of a PCD will be to ensure the conditions attached to the funding are clear up-front.

Priority Services Register (PSR)

The free support service register to help people in vulnerable situations, offered by suppliers and network operators.

Polychlorinated Biphenyls (PCBs)

PCBs are a group of synthetic chemicals, typically oil liquids or solids, that were banned in the UK in 1987.

R

Real Price Effects (RPEs)

We set price control allowances which can include a general inflation measure (CPIH) and certain price indices that reflect the external pressures on companies' costs. We refer to the difference between CPIH and certain price indices as RPEs.

Regional Factors

Uncontrollable factors that are either unique to, or disproportionately affect, the region in which a DNO operates, resulting in efficient costs that are higher or lower than the national average.

Regulatory Asset Value (RAV)

The value ascribed by Ofgem to the capital employed in the licensee's regulated business (the 'regulated asset base'). The RAV is calculated by summing an estimate of the initial market value of each licensee's regulated asset base at privatisation and all subsequent allowed additions to it at historical cost, and deducting annual depreciation amounts calculated in accordance with established regulatory methods. These vary between classes of licensee. A deduction is also made in certain cases to reflect the value realised from the disposal of assets comprised in the regulatory asset base. The RAV is indexed to allow for the effects of inflation on the licensee's capital stock.

Regulatory burden

A term used to describe the cost to regulated companies – both monetary and opportunity – of regulation.

Regulatory Instructions and Guidance (RIGs)

A document that is published as part of the price control settlement which sets out further detail on how the price control is to be implemented and how compliance with it will be monitored.

Reinforcement

The installation of new network assets to accommodate changes in the level or pattern of electricity or gas supply and demand.

Relevant Market Segments (RMS)

RMS refers to nine market segments defined by reference to the nature and volume of the connection activities and the work associated with them.

Re-openers

An Uncertainty Mechanism used in certain limited and pre-defined circumstances, which may amend revenue allowances, outputs and/or delivery dates within the price control period.

Research and development (R&D)

Work undertaken in order to increase knowledge and used to create new processes or technologies that will advance capabilities.

Retail Price Index (RPI)

The RPI is an aggregate measure of changes in the cost of living in the UK. It has a different formula to CPI; for example, it measures changes in housing costs and mortgage interest repayments, whereas the CPI does not.

Return Adjustment Mechanisms (RAMs)

Failsafe mechanisms to mitigate the future risk of companies earning materially higher or lower than expected returns in a changing system.

Return on Regulatory Equity (RoRE)

RoRE is the financial return achieved by shareholders in a licensee during a price control period from its actual performance under the price control. RoRE is calculated post-tax and is estimated using certain regulatory assumptions, such as the assumed gearing ratio of the companies, to ensure comparability across the sector. We use a mix of actual and forecast performance to calculate five-year average returns. These returns may not equal the actual returns seen by shareholders.

Revenue Driver

An Uncertainty Mechanism used to adjust allowed revenue during the price control if specific measurable events occur. Revenue drivers are used by Ofgem to increase the accuracy of the revenue allowances. See also 'volume driver'.

RIIO (Revenue = Incentives + Innovation + Outputs)

Ofgem's regulatory framework, stemming from the conclusions of the RPI-X@20 project. It builds on the success of the previous RPI-X regime, but better meets the investment and innovation challenge by placing much more emphasis on incentives to drive the innovation needed to deliver a sustainable energy network at value for money to existing and future consumers.

RIIO Electricity Distribution Price Control (RIIO-ED1)

The price control applied to the electricity distribution network operators. It runs from 1 April 2015 to 31 March 2023.

RIIO-ED2 Challenge Group (CG)

Ofgem has set up a central RIIO-ED2 challenge group that is independently chaired and which provided Ofgem with a public report on companies' business plans from the perspective of end consumers.

Ring-fence

The Ring-fence conditions in gas and electricity network operator licences provide assurance that network operators always have the financial and operational resources necessary to fulfil their obligations under legislation and their licences.

Risk-free rate

The rate of return that an investor would expect to earn on a riskless asset. Typically, government-issued securities are considered the best available indicator of the risk-free rate due to the extremely low likelihood of the government defaulting on its obligations.

RPI-X

The form of price control applied to regulated energy network companies before RIIO. Each company was given a revenue allowance in the first year of the control period. The price control then specified that in each subsequent year the allowance would move by 'X' per cent in real terms.[57]

RPI-X@20

Ofgem's comprehensive review of how we regulate energy network companies, announced in March 2008.[2] Its conclusions, published in October 2010, resulted in the implementation of a new regulatory framework, known as the RIIO model.

S

Scope 1 emissions

Direct emissions from sources owned or controlled by the reporting company that release emissions straight into the atmosphere.

[57] RPI-X@20 review | Ofgem

Examples of Scope 1 emissions include emissions from combustion in owned or controlled boilers, furnaces, vehicles; and emissions from chemical production in owned or controlled process equipment.

Scope 2 emissions

Indirect emissions being released into the atmosphere associated with the reporting company's consumption of purchased electricity, heat, steam and cooling. These are indirect emissions that are a consequence of the reporting company's activities but which occur at sources they do not own or control. This includes losses of electricity for electricity transmission and distribution companies.

Scope 3 emissions

Other indirect emissions that occur that are a consequence of the reporting company's actions, which occur at sources they do not own or control and which are not classed as Scope 2 emissions. Examples of Scope 3 emissions are business travel by means not owned or controlled by the reporting company, waste disposal, or purchased materials or fuels.

Secondary Network

Network assets where the primary voltage is HV or below.

Short interruption

A loss of electricity supply lasting less than three minutes.

Slow money

Slow money is where costs are added to the RAV and therefore revenues are recovered slowly (eg over 20 years) from both existing and future consumers.

Social Return on Investment (SROI)

Social Return on Investment is a framework for measuring and accounting for typically qualitative indicators. It measures social, environmental and economic outcomes and uses monetary values to represent them.

Special Purpose Vehicle (SPV) model

The SPV model is one of the late competition models that may be applied to projects that meet the Criteria for late competition during RIIO-2. Under the SPV model, the

incumbent network licensee would run a tender to appoint an SPV to finance, deliver and operate a new, separable and high value project on the licensee's behalf through a contract in effect for a specified revenue period. The allowed revenue for delivering the project would be set over the period of its construction and a long-term operational period (currently expected to be 25 years).

Storage (electricity)

Storage refers to any mechanism that can store energy, which has been converted into electricity. This can be primary (super-conducting and capacitor technologies), mechanical (pumped hydro, compressed air, flywheels) and electrochemical (batteries).

Strategic Innovation Fund (SIF)

A funding mechanism for strategic energy system transition innovation projects in the RIIO-2 price controls.

Strategic Investment

Investment which enables enhanced network capacity to be deployed in the short term in anticipation of expected longer term need. This may be needed to ensure no future net zero pathway is foreclosed or to ensure deliverability in the future, helping to keep longer term costs as low as possible for consumers.

Sulphur hexafluoride (SF_6)

A gas that is used as both an insulating and arc extinction medium in electrical plant. SF_6 has a global warming potential approximately 23,500 times more than CO_2 and makes up a portion of companies' BCF emissions.

Supplier

Any person authorised to supply gas and/or electricity by virtue of a Gas Supply Licence and/or Electricity Supply Licence.

Supply chain

Refers to all the parties involved in the delivery of electricity and gas to the final consumer - from electricity generators and gas shippers, through to electricity and gas suppliers.

Sustainable energy sector

A sustainable energy sector is one that promotes security of supply over time; delivers a low carbon economy and associated environmental targets; and delivers related social objectives (eg fuel poverty targets).

System Operator (SO)

The SO is the entity responsible for operating the transmission system and for entering into contracts with those who want to connect to the transmission system. In relation to electricity and gas, this role is performed by National Grid.

T

Technology Business Management Taxonomy

A standard taxonomy used to describe cost sources, technologies, IT resources, applications, and services.

Third party

Within the innovation context, third party refers to any person other than network companies. It may include, for example, private companies, academics, small and medium-sized enterprises, and trade bodies. It is often used interchangeably with non-network company.

Total expenditure (totex)

Totex includes both capital expenditure (capex) and operating expenditure (opex). Totex is made up of fast money and slow money.

Total Market Return (TMR)

A measure of return that equity investors expect for the market-average level of risk.

Totex Benchmarking

A cost assessment approach that includes all normalised controllable costs in a single benchmarking model.

Transmission Owner (TO)

Means, in the electricity sector, National Grid Electricity Transmission, Scottish Power Transmission or Scottish Hydro Electric Transmission and, in the gas sector, National Grid Gas Transmission.

Transmission system

The system of high voltage electric lines and high-pressure pipelines providing for the bulk transfer of electricity and gas across GB.

U

Uncertainty Mechanisms (UMs)

Uncertainty mechanisms allow changes to the base revenue during the price control period to reflect significant cost changes that are expected to be outside the company's control. Common UMs apply to all or some of the energy sectors, whereas bespoke UMs apply to one network company.

V

Value of Lost Load

A measure of the value that domestic and SME customers' place on the security of their supply of electricity.

Volume driver

An Uncertainty Mechanism allowing revenue to vary as a function of a volume measure (eg number of new connections).

W

Whole system solutions

Solutions arising from energy network companies and system operators coordinating effectively, between each other and with broader areas, which deliver value for consumers.

Worst served customer

Customer experiencing on average at least four interruptions at higher voltage distribution per regulatory year, over a three regulatory year period (ie 12 or more interruptions over three regulatory years, with a minimum of two interruptions per regulatory year).

Appendix 4 – 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

No personal data will be shared with any organisations outside Ofgem.

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

Your personal data will be held for twelve months after the project is closed.

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
- 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".