

RIIO-2 Final Determinations - Core Document (REVISED)

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

In 2019, we set out the framework for the price controls in our Sector Specific Methodology Decisions. In December 2019, Transmission and Gas Distribution network companies and the Electricity System Operator submitted their Business Plans to Ofgem setting out proposed expenditure for RIIO-2. We assessed these plans and published our consultation on Draft Determinations for company allowances under the RIIO-2 price controls in July 2020.

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

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1. Final Determinations at a glance

- 1.1 RIIO-2 will prepare the regulated network companies to deliver Net Zero at lowest cost to consumers, while maintaining world-class levels of system reliability and customer service, and ensuring no consumer is left behind.
- 1.2 In these RIIO-2 Final Determinations, we set out a £30bn package of investment in the energy networks and system operator to hit Net Zero targets. Crucially, we have designed an adaptable price control that will enable allowances to flex quickly as new investment needs become clearer over the course of the next five years - potentially at least a further £10bn. We are challenging companies to be as efficient as possible in how they run and finance themselves, to keep charges on bills as low as possible for consumers even as investment into clean energy projects rises throughout the decade. We want to make sure consumers' money goes towards improving the network and fighting climate change rather than on returns that are not in line with the level of risks taken by investors.
- 1.3 The key decisions for the RIIO-2 price control period, which will run from 1 April 2021 to 31 March 2026, are summarised below:

Preparing the networks to meet Net Zero...

- A funding package of up to £30bn to maintain our networks and support companies in transition to Net Zero, including funding to connect low carbon generation across the country
- A flexible package of uncertainty mechanisms enabling £10bn or more of additional funding to allow companies to bring forward strategic network investments during the price control to help meet Net Zero. This includes cross-sectoral uncertainty mechanisms, such as the system-wide Net Zero re-opener, and allowances for companies to develop new Net Zero project proposals. It also includes sector-specific uncertainty mechanisms, such as the Net Zero pre-construction and small project re-opener for gas transmission and gas distribution.
- A robust package of innovation funding to do more research and development into green energy. A minimum of £450m under the Strategic Innovation Allowance and £209m under the Network Innovation allowance to support network innovation that contributes to the achievement of Net Zero, including low carbon alternatives to gas heating, such as hydrogen

- A new funding approach for the Electricity System Operator (ESO), which enables it to spend approximately £504m over its first two-year Business Plan, to progress changes necessary to operate the system carbon-free by 2025, maximise competition, and facilitate a whole system approach network operation and planning.

...at lowest cost to consumers, with greater efficiency and lower returns...

- A 16% downward adjustment (on average) to the levels of funding that companies asked for in their Business Plans, reflecting our overall efficiency challenge to them to do more for less
- A greater proportion of costs (50-67%) saved by network companies under RIIO-2 to be shared with consumers
- Greater accountability for what companies are asked to deliver, with around 50% of baseline allowances for gas distribution and 70% of baseline allowances for transmission linked to either uncertainty mechanisms or Price Control Deliverables. This will ensure network companies are only paid for what they deliver, and consumers are refunded for work not carried out
- An ongoing efficiency challenge of 1.2% per year across most of the gas distribution and transmission bases, compared to an average efficiency challenge of 0.8% in RIIO-1
- The cost of equity reduced from approximately 7.8% RIIO-1 (CPIH) to 4.55% in RIIO-2 (at 60% gearing), with allowed returns forecast at 4.3% to reflect expected outperformance of 0.25%.

...while maintaining world class levels of customer service and reliability...

- A package of incentives to further improve the quality of service for consumers (worth -0.7% to +0.2% in rewards and penalties for electricity transmission, -0.7% to +0.3% in gas distribution, and -0.3% to +0.3% in gas transmission). This includes incentives to improve reliability and reduce interruptions, enhance customer and stakeholder engagement, as well as reduce the impacts of the networks on the environment.
- Approximately £13b funding to maintain, replace and repair ageing network assets, and further funding for network resilience
- Strengthened gas distribution service standards, including doubling consumer compensation payments if companies fail to meet minimum standards

...and making sure no one is left behind

- Strong representation of the consumer voice at the heart of developing the RIIIO-2 price control, through the enhanced engagement process
- Strengthened quality-of-service targets, particularly in key customer priority areas such as connections, reliability, and environmental impact
- Focusing our innovation stimulus on improving services for consumers in vulnerable situations
- Stronger license conditions for network companies to treat all consumers fairly
- A step change in funding and protections for consumers in vulnerable situations, including providing GDNs a new £60m allowance for this purpose, with encouragement to work with local partners and charities to maximise benefits from the support offered

2. RIIO-2 overview

- 2.1 The RIIO-2 price control covers a 5-year period, which runs from 1 April 2021 to 31 March 2026. For the ESO, we have decided to set costs and outputs for a period of 2 years, from 1 April 2021 to 31 March 2023. The ESO will then submit a further Business Plan for the next period. This reflects the need for the ESO to adapt as it responds to the changing electricity system.
- 2.2 In our Final Determinations, we set out the policies that determine allowed revenues that companies may collect during the price control. Allowed revenue is adjusted throughout the price control for company performance and other uncertain factors within the price control, in accordance with network licences.

RIIO-2 development process

- 2.3 We began the RIIO-2 development process in July 2017 with an open letter setting out the context and aims for RIIO-2. In March 2018, we consulted on the overarching RIIO-2 framework and followed with our RIIO-2 Framework Decision in 2018.
- 2.4 In December 2018, we issued our Sector Specific Methodology Consultation (SSMC) on the key elements of the regulatory framework for RIIO-2 for gas transmission (GT), electricity transmission (ET), gas distribution (GD), and the ESO. In 2019, we followed this with our Sector Specific Methodology Decisions (SSMD), which included the outputs that we expect companies to deliver in RIIO-2, our approaches to setting Totex allowances and ensuring investor returns reflect the risk associated with those investments.
- 2.5 Our SSMD also provided the framework for the companies to develop their Business Plans (BPs) for RIIO-2, which included guidance on the Business Plan Incentive (BPI) and the enhanced engagement process.
- 2.6 Companies submitted their BPs to us and published them on their websites on 9 December 2019. As part of the analysis of BPs, we raised a number of supplementary questions directly with the companies and, where necessary, held bilateral discussions and working groups with companies to explore relevant issues further.

2.7 In July 2020, we published our Draft Determinations consultation setting out our proposals for each sector and licensee. The consultation closed on 4 September 2020. During and since the consultation, there has been extensive engagement with stakeholders, including open meetings. We have listened to feedback and considered responses in reaching our Final Determinations.

RIIO-2 next steps

2.8 We note that Final Determinations is not the end of the process for setting the RIIO-2 price control. We expect companies to continue to work constructively with us to finalise all aspects of RIIO-2. This will include finalising Associated Documents for a range of outputs and mechanisms to enable companies to deliver the price control effectively.

2.9 Following the publication of our Final Determinations, we will publish our statutory consultation on licence modifications, including the Price Control Financial Instruments in December 2020.

2.10 In February 2021, we will publish RIIO-2 licences and Price Control Financial Instruments.

2.11 In the Spring 2021, we plan to consult on the Strategic Investment Funding (SIF) Governance Guidance.

2.12 On 1 April 2021, RIIO-2 price controls for ET, GT, GD, and the ESO will commence.

Navigating the Final Determinations

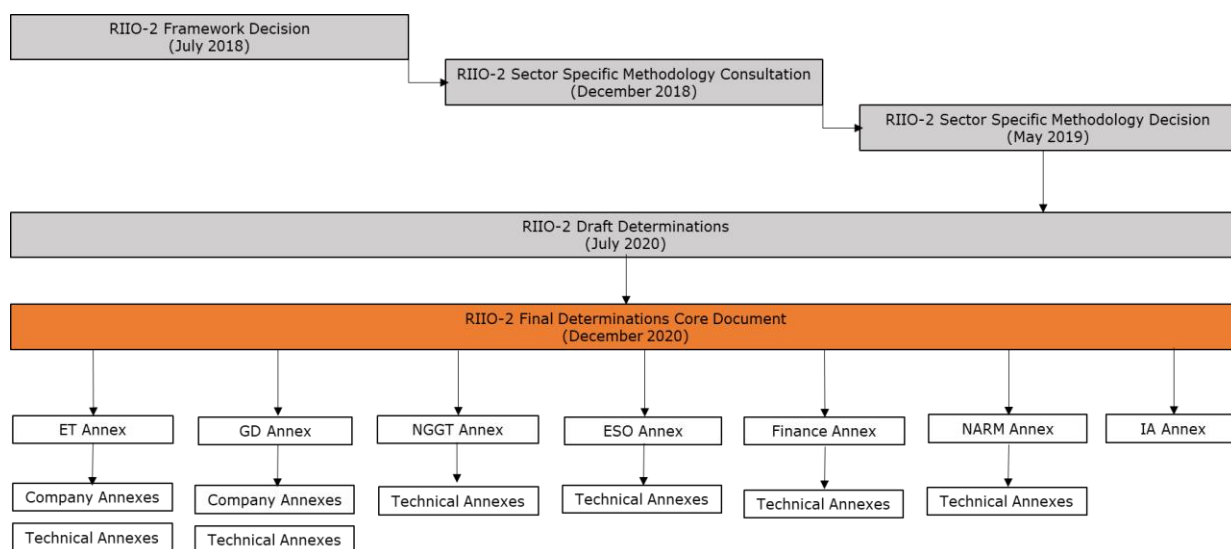
2.13 Our Final Determinations document suite is set out in Figure 1. This document is the Core Document and contains details on topics where our approach to aspects of RIIO-2 is common to all sectors or GD, GT and ET. Where there are sector-specific considerations or different approaches, we have explicitly set these out in this document with further detail included in Sector Annexes and/or Company Annexes. This document should be read alongside the:

- Sector Annexes (ET and GD) - these contain our decisions on topics that are specific to a sector with more than one licensee, such as visual amenity in ET,

or replacement expenditure (repex) in GD. These documents provide a sector overview of the price control

- Finance Annex – this contains our decisions on the regulatory finance building blocks of RIIO-2. In general, these apply to all sectors with sector or company-specific considerations identified
- Company Annexes – these contain set of decisions specific to each network company (the ESO and NGGT documents are combined sector/company documents)
- NARM Annex – this contains our decisions on the Network Asset Risk Metric (NARM) outputs that network companies will be required to deliver during RIIO-2 and the relevant mechanism for over- or under-delivery
- Impact Assessment – this contains our assessment of the likely impact of these regulatory measures on consumers and network companies
- Technical Annexes – these include detail underpinning our decisions, including, where appropriate, consultancy reports relevant to specific topics, such as the frontier shift. These will be cross-referenced where relevant.

Figure 1: RIIO-2 Final Determinations documents map



Navigating this document

2.14 This document captures the core elements our Final Determinations for RIIO-2. Below is a synopsis of each Chapter of this document.

Chapter 3. Embedding the consumer voice in RIIO-2

2.15 We expect companies to respond to changes across the energy sector and to put their stakeholders' needs at the heart of the way they run their businesses. We established the Challenge Group, and required the companies to set up Consumer Engagement Groups (for GD) and User Groups (for ET, GT, and the ESO) (collectively 'the Groups'), with the purpose of enhancing scrutiny of companies' BPs. In Chapter 3, we set out how the feedback from the Groups has informed our Draft Determinations and Final Determinations. We also set out how we will further review the role for the Groups during RIIO-2.

Chapter 4. Quality of service – setting outputs for RIIO-2

2.16 Outputs and incentives are a key feature of the RIIO-2 framework. They are designed to drive companies to focus on delivering the objectives that matter to existing and future consumers.

2.17 The output delivery incentives and price control deliverables specify:

- the service levels that customers should receive
- the levels of performance that the companies need to achieve
- the financial and reputational consequences for companies that out- or under-perform against these outputs
- the safeguards to protect consumers if specific investments are not delivered as planned.

2.18 We set out our decisions on RIIO-2 outputs in Chapter 4. For the ESO we have decided to set a tailored outputs and incentives framework, discussed in our ESO Sector Annex.

Chapter 5. Ensuring efficient cost of service

2.19 In their BPs, network companies forecast a total expenditure of just over £24bn – an increase relative to RIIO-1. Following our assessment and engagement undertaken since our Draft Determinations, we have decided to set a baseline Totex allowance for network companies at £20.3bn. As set out in Chapter 5, Totex allowances for network companies are between 10% and 27% below company submitted costs.

- 2.20 We expect network companies to continue to be efficient in their performance throughout RIIO-2, allowing them to deliver better services for customers, and to protect and improve the environment, while at the same time keeping bills low. In this context, we have set an ongoing efficiency challenge of ~1.2% per year for all transmission and gas distribution network companies in RIIO-2. Our full approach is set out in Chapter 5.
- 2.21 Our approach to funding the ESO, including managing uncertain costs, recognises that the ESO's own costs compared to the consumer benefits it can deliver are relatively low. This is primarily set out in Chapter 4 of our ESO Sector Annex, with managing uncertainty more broadly discussed in Chapter 7.

Chapter 6. Ensuring efficient financing

- 2.22 Following our assessment and engagement undertaken since our Draft Determinations, network companies will see lower returns compared to RIIO-1. The returns we have set are fair, based on market evidence, and allow us to protect the interests of existing and future consumers, while having regard to the need to secure that companies are able to finance their activities which are the subject of obligations imposed by us or under relevant legislation. As set out in Chapter 6, the RIIO-2 price control provides greater certainty for investors than previous controls, with lower sharing factors and a narrower Return on Regulatory Equity range than RIIO-1.
- 2.23 The Weighted Average Cost of Capital (WACC) allowance that we decided for ET, GT and GD companies is the lowest ever proposed for network companies and reflects the current historically low interest rate environment. This will reduce costs for consumers, while fairly compensating investors for the risks they face. We will index the two main components of the WACC (debt and equity allowances) to protect both consumers and networks from forecast error, with allowances changing if interest rates change. See our Finance Annex for further details. Key financial parameters for the ESO are set out in Chapter 5 of the ESO Annex.

Chapter 7. Managing uncertainty

- 2.24 We have decided to set baseline Totex allowances for ET, GT, and GD only where we are satisfied of the need for and certainty of the proposed work, and where there is sufficient certainty of the efficient cost of delivery. We have put Price

Control Deliverables (PCDs) in place to ensure that companies are held to account to deliver specific outputs. Over 50% of Totex allowances are subject to PCDs.

- 2.25 Where uncertainty remains, we have decided to use a range of mechanisms to manage this during the price control period. We set out our approach to managing uncertainty for the network companies in Chapter 7.

Chapter 8. Net Zero and innovation

- 2.26 A key element of the RIIO-2 price control design is to support the network companies in preparing for the transition to Net Zero. Although the path to Net Zero and its impact on the network companies is uncertain, we have designed a flexible price control that maintains a careful balance between facilitating Net Zero investment and ensuring that it is delivered at the lowest cost to consumers.
- 2.27 Where there is a clear needs case to provide allowances for Net Zero investment now, we have set baseline funding. In cases where there is less certainty that a particular investment is needed, or the scope or cost of the investment is unclear, we have introduced a range of uncertainty mechanisms to enable the price control to flex when investment needs become clearer. We have also set out how we will ensure the processes for managing uncertainty remain adaptive to meet the potentially significant investment needs that could arise during RIIO-2.
- 2.28 We set out our approach to supporting network companies in preparing for the transition to Net Zero through dedicated Net Zero and innovation funding in Chapter 8.

Chapter 9. Increasing competition

- 2.29 Competition in the design and delivery of energy networks is a central aspect of the RIIO-2 price controls. It has a key role to play in driving innovative solutions and efficient delivery that can help us meet our decarbonisation targets at the lowest possible cost to consumers.
- 2.30 We set out our decisions for how competition will feature within the RIIO-2 package in Chapter 9.

Chapter 10. Totex and Business Plan Incentive Mechanisms

- 2.31 We recognise the importance of designing a price control framework that mitigates the negative effects that may arise from information asymmetry that exists between Ofgem and the companies.
- 2.32 For RIIO-2 we designed the BPI to encourage network companies to submit ambitious plans that contain the information Ofgem required to undertake a robust assessment of the Business Plans. We have applied our BPI framework to the companies' BPs (but not to the ESO). Our decisions for the BPI are set out in Chapter 10, with further detail in Chapter 6 of the Company Annexes.
- 2.33 The Totex Incentive Mechanism (TIM) was designed to encourage companies to improve efficiency in delivery and ensure that the benefits of these efficiencies are shared with consumers. We expect consumers to receive a greater proportion of costs saved under the RIIO-2 price controls than under RIIO-1 controls, while still maintaining a strong incentive for companies to operate efficiently. Our decisions for the TIM for GDNs and TOs are set out in Chapter 10, with further detail in Company Annexes. For the ESO, we use a different approach to cost regulation, which does not apply the TIM – see the ESO Annex for details.

Chapter 11. RIIO-2 in the round, interlinkages and appeals

- 2.34 Our RIIO-2 price control package represents a balanced and fair settlement for consumers and licensees that should be looked at 'in the round'. Our approach to understanding the different interlinkages within the RIIO-2 price control package and our view of "in the round" is set out in Chapter 11.

Chapter 12. Impact of COVID-19 on the price controls

- 2.35 The various measures taken by the Government and devolved administrations to control the spread of the COVID-19 virus had a significant and immediate impact on the way network companies carry out their business as usual activities in 2020. We have decided that any adjustments to RIIO-1 and RIIO-2 performance for the COVID-19 impacts should be made through the respective close-out processes.
- 2.36 We set out our approach to reflecting the impact of COVID-19 on the price controls in Chapter 12.

Chapter 13. Post Final Determinations work for RIIO-2

- 2.37 We set out our early thinking on the post Final Determinations work, including development of the close-out process for RIIO-2 and engagement with stakeholders in relation to the disapplication licence condition in Chapter 13.

3. Embedding the consumer voice in RIIO-2

3.1 In this Chapter, we set out how our enhanced engagement process has strengthened the voice of consumers in reaching our Final Determinations. We show how the consumer groups have shaped our Final Determinations and provide initial views on their future role.

The RIIO-2 enhanced engagement timeline

3.2 We expect companies to put consumers at the heart of the way they run their businesses. As part of the RIIO-2 enhanced engagement process, independent consumer groups (the Groups) challenged network companies to develop BPs that addressed the needs and preferences of their stakeholders and delivered good value for money. Ofgem received reports from the Challenge Group (CG) on all network companies, the Customer Engagement Groups (CEGs) on gas distribution companies (GDNs), the User Groups (UGs) on transmission companies (TOs), and the ESO User Group (ESRG) on the ESO.

3.3 Table 1 provides a summary of the key milestones in the enhanced engagement process and links to further information.

Table 1: RIIO-2 enhanced engagement process and milestones

Date	Milestone
9 December 2019	RIIO-2 BPs submitted to Ofgem and published on the companies' websites
13 December 2019	We published a Call for Evidence ¹ in the lead up to the RIIO-2 Open Hearings in March/April 2020. We stated that stakeholders may wish to consider the reports produced by the Groups when providing their views in response to our Call for Evidence.
3 January 2020	CEG and UG reports on the companies' RIIO-2 BPs published. ²
24 January 2020	CG report published. ³
March/April 2020	We had planned to host Open Hearings, but this was cancelled due to COVID-19.
August 2020	We held a series of four webinars ^{4, 5, 6, 7} aimed to enable stakeholders, particularly those with less technical knowledge of price controls, to ask

¹ [Call for Evidence, Ofgem, 13 December 2019.](#)

² [Reports on the network company Business Plans, CEGs and UGs, 3 January 2020.](#)

³ [Report on the network company Business Plans, CG, 24 January 2020.](#)

⁴ [Transmission webinar recording, Ofgem, 4 August 2020.](#)

⁵ [Gas Distribution webinar recording, Ofgem, 14 August 2020.](#)

⁶ [Net Zero webinar recording, Ofgem, 10 August 2020.](#)

⁷ [Finance webinar recording, Ofgem, 12 August 2020.](#)

Date	Milestone
	us questions and better understand the RIIO-2 development process and our Draft Determinations.
October 2020	We held a series of online Open Meetings with each of the network companies. The aim of these was to facilitate a constructive discussion between Ofgem, network companies, the Groups, and stakeholders about the companies' key priorities for RIIO-2 ahead of the Final Determinations. These meetings were open to all interested stakeholders, who could listen to the discussion and participate in the Q&A session by asking questions.

Capturing consumer voices in Final Determinations

- 3.4 In their responses to Draft Determinations, stakeholders (particularly the CEGs, UGs and CG) asked that we show more clearly how we used the insights from the enhanced engagement process to inform our decisions. In Table 2 we illustrate with examples where the Groups have influenced our decisions. The policy specific issues raised in responses to the consultation are considered alongside the relevant policy to which they relate in Sector Annexes and Company Annexes.
- 3.5 The Groups played an important role in challenging companies to engage with consumers and stakeholders and this is demonstrated in the quality of their BPs. The Groups' reports clarified their role in developing the BPs and how companies used stakeholder insight to inform their proposals. The Groups' reports enabled us to better understand stakeholder priorities in areas such as vulnerability and environmental impact which we used to inform the strategic direction and ambition for Draft and Final Determinations.
- 3.6 In reaching regulatory decisions about the BPs we had to balance consumer research and engagement with other considerations. Set out below are some of the key considerations we took into account when assessing proposals recommended by the Groups:
- do proposals meet our requirements as set out in the Business Plan Guidance, including:
 - Are proposals implementable and fully developed?
 - Do proposals clearly articulate the benefits and costs?
 - Are proposals sufficiently stretching for the companies? In this area CEGs and UGs were at a disadvantage because they were not always able to assess the proposals against cross sector standards. Our ability to do so meant that we were better able to set appropriately challenging targets and standards.

- Do proposals set similar standards between the regions across GB? Some proposals set out widely diverging service standards across GB, which we did not consider appropriate.

Table 2: Examples of where the Groups influenced RIIO-2

Area of RIIO	Policy area	Sector	Groups' role	Contribution to FDs
Company BPs	Multiple	All	CEGs/ UGs challenged the companies to produce more ambitious BPs that better reflected stakeholder needs.	See CEG/UG reports for summaries of how they challenged company proposals ahead of BP submission to Ofgem.
RIIO-2 Strategic direction	Multiple	All	Independent insight on consumer and stakeholder priorities. The Groups pushed for agility and proportionately in the uncertainty mechanism design.	The reports were a key input into deciding on the level of our ambition for companies in our determinations
Outputs	Environmental Action Plan	GD/ET/GT	Assurance through CEG/UG scrutiny led us to accept most proposals as submitted in BPs.	RIIO-2 will place more focus on companies' environmental impact reduction activities than ever before.
Cross cutting issues	Governance of ESO IT	ESO	ERSG raised concerns about ESO's reliance on NGG for IT	This prompted us to consider the issue in more detail and obtain more evidence on whether the ESO should operate a separate autonomous ESO IT model.
Outputs	Outputs and incentives package	ESO	ERSG raised concern that the price control focused too much on ESO internal costs rather than ESO outputs and long-term benefits	We have reduced the ESO's maximum exposure to disallowance risk and ensured our Value for Money assessment is proportionate. We have explained how our incentives evaluation links to the ESO's long term strategic outcomes and BP benefits.
Outputs	Vulnerability and Carbon Monoxide Allowance	GD	Strong consumer voice on DD funding level and scope	Better shaped company proposals than we would have envisaged at BP stage. After important additional evidence was provided alongside strong consumer support, we decided in FDs to double vulnerability UIOLIA from £30m to £60m.

Area of RIIO	Policy area	Sector	Groups' role	Contribution to FDs
Uncertainty Mechanisms	Statutory Independent Undertakings (SIU) biomethane	GD	CEG DD response and open meeting shone light on a relatively small, but important, area to stakeholders and the environment.	We have made clear in our FD that RIIO-GD2 can actively support this area, including through our new Net Zero and re-opener development use-it-or-lose-it (UIOLI) allowance or the NIA.
Innovation	Funding for Net Zero	All	Challenged us to ensure a fair sharing of cost between energy consumers and taxpayers in funding R&D to drive Net Zero	In implementing our Strategic Innovation Fund, we will coordinate closely with other public funders of innovation
Totex	Totex allowance	GT/ET	CG highlighted concerns that Totex forecasts, particularly NLRE, were higher than necessary	Overall, we reduced Totex by 45% compared to TOs company submissions.

Enduring role of the UGs and CEGs

- 3.7 We consider that the enhanced engagement process has worked well, and helped us shape our Final Determinations. We will continue with this approach in developing the RIIO-ED2 price control, incorporating lessons learnt from our experience to date to improve arrangements.
- 3.8 In early 2021, we consider there is merit in conducting a formal evaluation of the enhanced engagement process used to develop our Final Determinations. The results of this evaluation will feed into the enhanced engagement process for RIIO-ED2 in the short term and for RIIO-3 in the long term.
- 3.9 We will also use the evaluation to determine whether and, if so, to what extent the enhanced engagement approach should apply during the price control period. The evaluation will give further consideration to the responses to our Draft Determinations on the enduring role for the Groups, including responses on whether the Groups should monitor progress made by the companies to deliver the commitments in their engagement strategies.
- 3.10 Until we have completed our evaluation and determined recommendations for the enhanced engagement process, we do not intend to place a formal requirement on the GDNs and TOs to retain the CEGs and UGs during the RIIO-2 price control period. We understand that the ESO is planning to continue to use its stakeholder group, known as the ERSG, and the group will support the development of the ESO's second BP. It will be important for the ESO to engage appropriately with all its stakeholders and users to develop the draft and final versions of its second BP.
- 3.11 We continue to believe there is value in companies continuing their formal engagement with the Groups. We are carrying out an evaluation of the process to date to enable us to refine our thinking around what has worked well, and where improvements could be made, to inform the structure and processes needed to make any future formal role as effective as possible in future. For this reason, we are not placing a formal requirement on GDNs and TOs to retain the Groups for the operating period.

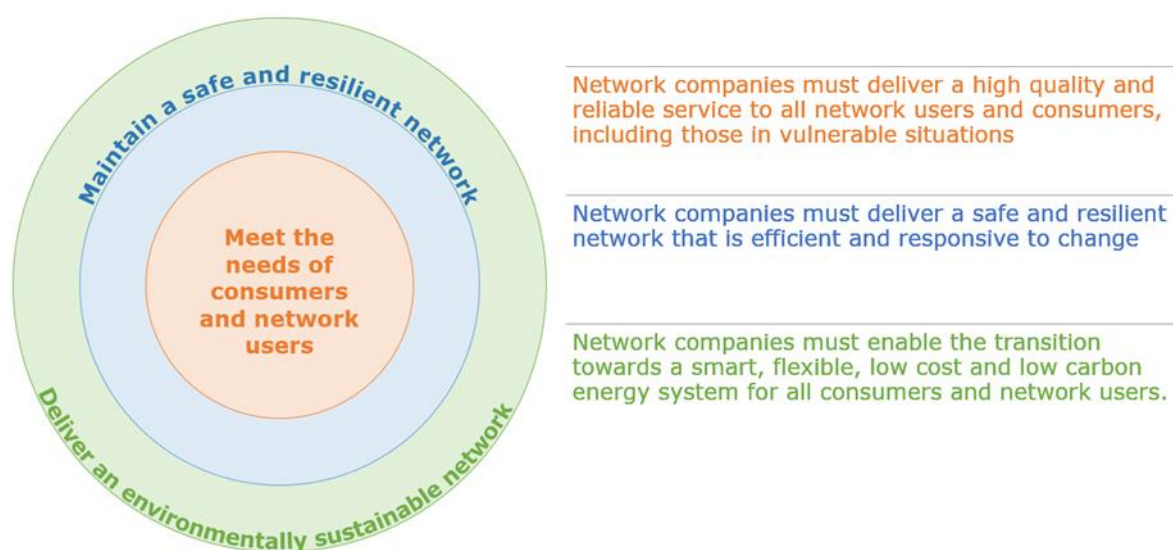
4. Quality of service – setting outputs for RIIO-2

4.1 In this Chapter, we set out our decisions for the RIIO-2 outputs framework for GDNs and TOs, and outputs that are common across sectors. As set out in our SSMD, the ESO is subject to a bespoke approach to outputs and incentives. This is set out in Chapters 2 and 3 of the ESO Sector Annex and is not discussed in detail in this document. Some cross-sector outputs set out below are also relevant to the ESO – we have specified where this is the case.

RIIO-2 outputs framework

4.2 In our SSMD, we established the RIIO-2 outputs framework for GDNs and TOs. Outputs for RIIO-2 are grouped into three consumer-facing output categories, as set out in Figure 2 below.

Figure 2: Consumer facing output categories



4.3 The RIIO-2 outputs are categorised into three components:

- Licence Obligations (LOs) – these set minimum standards that network companies must achieve.
- Price Control Deliverables (PCDs) – these specify the deliverable(s) for the funding allocated, and the mechanism(s) to refund consumers if an output is not delivered (or not delivered to a specified standard).

- Output Delivery Incentives (ODIs) – these drive service improvement through reputational and financial incentives.

4.4 The RIIO-2 outputs are then further categorised as either ‘common’ or ‘bespoke’. Common outputs apply to all sectors or all companies within a sector (eg all GDNs or TOs). We use common outputs for areas of service quality that are relevant to all consumers in a sector or multiple sectors. In contrast, bespoke outputs are specific to individual companies; they seek to reflect their local needs.

4.5 We set out our decisions on outputs across the Final Determinations document suite. Table 3 sets out where specific information on outputs can be found.

Table 3: RIIO-2 outputs and location

Type of output	Further detail location
Common outputs	Cross-sector common outputs: Our decisions for outputs that are common across multiple sectors of the RIIO-2 price control are either set out in this Chapter or in relevant documents (as per Table 4 below).
	Sector-specific common outputs: Our decisions for outputs that are common across a sector are detailed in our ET and GD Sector Annexes, and NGGT Company Annex.
Bespoke outputs	Our decisions for outputs that are bespoke to individual companies are detailed in our Company Annexes. Not all network companies have bespoke outputs.

Licence Obligations

4.6 Our Final Determinations on common RIIO-2 LOs are summarised later in this Chapter. Our Final Determinations on sector and company specific RIIO-2 LOs are set out in Chapter 2 of Sector Annexes and Chapter 2 of Company Annexes. These will also be set out in the statutory consultation on modifications to licence conditions, which will be published in December 2020.

Price Control Deliverables

Purpose: To put in place a framework that supports our ability to hold licensees accountable for delivering work funded through the price control.

Benefits: The PCD framework provides a greater level of clarity between baseline allowances and associated outputs, which will encourage better and more focused delivery in RIIO-2 compared to RIIO-1 and will ensure that companies are only paid for what they deliver.

Final Determinations

4.7 We have decided to create two types of PCDs linked to baseline allowances:

- Mechanistic PCDs are set in cases where work is either repeatable with a defined volume of work and we can set allowances by reference to the unit costs. In such cases, the recovery of allowances for any non-delivery of work is automatic. An example of a mechanistic PCD is the gas holders PCD for GD.
- Evaluative PCDs are set in cases where the exact work delivered has potential to vary in part from the PCD output, either in cost or specification. For evaluative PCDs, our approach allows for an in-depth assessment of the output delivered and whether an adjustment to allowances is necessary to protect consumers. An example of an evaluative PCD is the resilience and operability PCD for ET.

4.8 Further details about the PCD framework, our approach to assessing delivery and any adjustments to allowances, and the reporting requirements for licensees will be set out in the PCD Reporting Requirements and Methodology Document⁸ ('PCD AD') and the relevant licence conditions.

4.9 A full list of PCDs and associated allowances are set out in Company Annexes.

Final Determination rationale and Draft Determinations responses

4.10 We received responses to our Draft Determinations for all licensees, asking for further clarity on the mechanics of the PCD framework and how it would work in practice. As part of the development of the PCD framework, we engaged extensively with licensees. We held two workshops (in August and November 2020) to discuss all aspects of our approach, and published draft versions of the PCD AD to seek written feedback from all stakeholders. We will set out details of our approach in the PCD AD.

4.11 We have decided to implement our PCD framework to provide an explicit link between the price control funding and the delivery of outputs specified in the licence. This framework puts in place mechanisms to allow us to monitor PCD delivery and expenditure, with an ability to return or reprofile allowances in the

⁸ We intend to publish a consultation on the PCD AD at the same time as the statutory consultation on the licence.

event of delays or material differences between specified PCDs and the output actually delivered.

- 4.12 As outlined in our PCD AD, licensees will report on PCD delivery through the annual Regulatory Reporting Packs (RRPs) for both evaluative and mechanistic PCDs. For evaluative PCDs, licensees may be required to submit individual PCD Delivery Reports. The PCD AD will set out further details on the information needed in those PCD Delivery Reports and timings. We will provide further reporting guidance as part of the RIGs⁹ and will look to ensure that reporting requirements are proportionate and will not lead to undue burden.

PCDs and innovation and efficiency

- 4.13 We think that our PCD framework strikes the right balance between the need to promote innovation and efficiency and the need to ensure that consumers get good value for money. Respondents to our Draft Determinations raised the concern that our PCD framework is unduly prescriptive and discourages innovation and efficiency by limiting the scope for licensees to benefit from delivering alternative cheaper solutions (or none at all). We do not agree with this view because under our PCD framework:
- Licensees can still benefit under the TIM if they deliver the PCD in full, as specified. This allows the scope for efficiencies and innovation to be rewarded, to the extent that these have allowed the licensee to deliver the specified output at a lower cost.
 - Licensees can benefit under the TIM if they deliver an alternative to the specified PCD, provided they can demonstrate that the alternative delivers an outcome for consumers that is equivalent or better than the original, and that any cost savings achieved (relative to allowances) are genuinely attributable to efficiencies or innovation.
 - The framework encourages licensees to take account of changing circumstances and only deliver the PCD if it continues to be beneficial for consumers. Our framework includes mechanisms that would allow licensees to retain efficient costs of undertaking work that may have led to the cancellation or deferment of funded work.

⁹ Regulatory Instructions and Guidance are documents that are published as part of the price control settlement and set out further detail on how the price control is to be implemented and how compliance with it will be monitored.

4.14 We have decided to make the PCD assessment process as smooth as possible by making it automatic for mechanistic PCDs and targeted and proportionate for evaluative PCDs. Some responses highlighted concerns about the financial and charging implications if the PCD assessment occurs long after the delivery of outputs. Network companies have also stressed concerns about the resourcing required to ensure they are able to provide appropriate justifications and respond to any technical queries during the assessment period. We recognise that there is a trade-off between the revenue certainty that can be provided by early and more frequent assessments, and the increased resource and administrative burden on licensees and Ofgem that comes with it. We believe we struck an appropriate balance between the two.

PCDs and adjustment to allowances

4.15 Some network companies have raised concerns that the PCD framework is asymmetric and biased against network companies. They argue that in the case where an external event reduces costs for network companies, Ofgem would recover baseline allowances and the network company would not share in any savings. Furthermore, network companies argue that where an external event increases costs, then the network company would bear a share of the cost increase. This situation may encourage network companies to take a low-risk approach and avoid innovative approaches that could save consumers money.

4.16 We will only look to undertake an ex post assessment where the licensee deviates from the PCD output as specified by us. Even then, we will not look to adjust allowances if the licensee can demonstrate that the consumer outcome delivered is the same or higher and any cost savings achieved (relative to allowances) is genuinely attributable to efficiency or innovation. In other cases, we will look to reduce allowances to match the efficient costs of delivering the alternative.

4.17 We will also ensure that licensees are not penalised for efficient non-delivery (or deferment) by allowing them to recover efficient costs incurred prior to taking the decision to cancel or defer the deliverable.

PCDs and other aspects of the price control

4.18 The network companies, industry body and consumer group requested greater clarity regarding the interactions between PCDs and other aspects of the price control. Two network companies and the industry body were concerned by the

potential disconnect between the asset-specific PCDs and the overall NARM indicator. With respect to NARM, we have made provision for specific works covered by NARM to be ringfenced as individual PCDs such that the allowance adjustment for under-delivery will be specific to such works.

- 4.19 The consumer body raised concerns specifically around the potential overlap between the Interruption and Insulation (IIG) ODI and PCDs. Specifically relating to the lack of clarity between IIG targets and asset interventions that are driven by SF6 mitigation PCDs. We can confirm that asset interventions that are delivered under SF6 PCDs will be reflected in the adjustment of the IIG ODI target based on the expected level of emission abatement.

Output Delivery Incentives

- 4.20 We have set the ODI package to focus companies on delivering objectives that matter to existing and future consumers. In general, ODIs reward companies for delivering outputs up to the point where the marginal benefits to consumers from additional spending equals the marginal cost. Since expenditure goes through the TIM, it follows that if the rewards and penalties for an ODI are directly calibrated to the consumer value produced, the rewards and penalties should be subject to the TIM sharing factor (to maintain parity between them).
- 4.21 There are, however, exceptions to the application of the TIM on ODIs. For example:
- We have not applied the TIM to ODIs where rewards and penalties are not directly calibrated to an estimate of consumer value.
 - We have applied different (lower) sharing factors to ODIs where estimated consumer value is affected by factors outside of companies' control.
- 4.22 Further information on the ODIs where the TIM has been applied can be found in Chapter 3 in Sector Annexes and Chapter 3 in Company Annexes.
- 4.23 On ODI caps and collars, our SSMD indicated that there would be an upcoming decision on how they would be applied for sector-wide ODIs. We have decided to implement our Draft Determinations position and calibrate them with reference to ex ante base revenue. For further detail on our reasoning for this decision, please refer to Chapter 11 of the Finance Annex.

4.24 We believe that our RIIO-2 ODI package taken in the round is balanced and provides the appropriate level of financial incentives to licensees to innovate and trial new ways of delivering services, for the benefit of future consumers. Indeed, we believe that an efficient licensee that responds well to our ODI package could earn positive rewards. Further detail on our assessment of the ODI package in the round is set out in Chapter 11 of this document.

Cross-sector outputs

4.25 The following sections set out our decisions for outputs that are common across multiple sectors of the RIIO-2 price control.

4.26 Outputs that we have decided to set for multiple sectors are set out in Table 4.

Table 4: RIIO-2 cross-sector outputs

Output name	Output type	Sectors applied to	Final Determination section
Meeting the needs of consumers and network users			
Modernising Energy Data	LO	All	Chapter 4 Core Document
Maintain a safe and resilient network			
Workforce planning	N/A	ET, GD, GT	Chapter 4 Core Document
Cyber Resilience OT	Use-it-or-lose-it allowance and PCD	All	Confidential annexes
Cyber resilience IT	PCD	ET, GD, GT	Confidential annexes
Physical Security	PCD	ET, GD, GT	Chapter 3 Company Annexes
Network Asset Risk Metric (NARM)	PCD and ODI-F	ET, GD, GT	NARM Annex
Large Project Delivery (LPD)	PCD and ODI-F	ET, GD, GT	Chapter 4 Core Document Chapter 2 ET Sector Annex
Delivery an environmentally sustainable network			
Environmental Action Plans and Annual Environmental Report	LO, ODI-R and EAP commitments	ET, GD, GT	Chapter 4 Core Document Chapter 2 ET/GD Sector Annexes Chapter 2 NGGT Annex

* ODI-R/F = Output Delivery Incentive (Reputational/Financial), PCD = Price Control

Deliverable, LO= Licence Obligation

Meeting the needs of consumers and network users

Modernising Energy Data

Purpose: Making better use of Energy System Data and digital technologies to generate value for stakeholders.

Benefits: Network companies and the ESO to make better use of Energy System Data to deliver a more efficiently planned, maintained and operated energy system. Users of Energy System Data have greater information and insight, improving the energy services offered to consumers.

- 4.27 In November 2019, we announced we are developing Data Best Practice Guidance¹⁰ to define how we expect Energy System Data¹¹ to be used. We did that as part of our programme, Modernising Energy Data¹²; a collaboration between Ofgem, the Department for Business, Energy and Industrial Strategy and Innovate UK.¹³
- 4.28 In September 2019, we asked network companies, including the ESO, to publish digitalisation strategies alongside the submission of their BPs in December 2019.¹⁴ The strategies outline the actions network companies will take to digitalise the energy system. In June 2020 we published our feedback on the digitalisation strategies in an open letter to the network companies.¹⁵
- 4.29 In the letter we said we wanted companies to use the feedback to review their strategies, and to publish an updated "Digitalisation Strategy and Action Plan" by 31 December 2020.
- 4.30 We also said that we were minded to include two licence obligations in RIIO-2 for:
- companies to publish upgrades to the digitalisation strategy at least once every two years and updates to the digitalisation action plan at least once every six months

¹⁰ [Data Best Practice guidance](#)

¹¹ Our working definition of Energy System Data has evolved from the definition provided by the [Energy Data Task Force](#): "facts and statistics collected together that describe the energy system (current, historic and forecast), including: the presence and state of infrastructure, its operation, associated market agreements and their operations, policy and regulation."

¹² [Modernising Energy Data](#)

¹³ [Innovate UK](#)

¹⁴ [Modernising energy data digitalisation strategy](#) paragraph 2.44

¹⁵ [RIIO Digitalisation strategies](#)

- companies to use Energy System Data in accordance with Data Best Practice guidance.

4.31 This section sets out our decisions on these two licence obligations.

Digitalisation Strategy and Action Plan

Final Determination

Output parameter	Final Determination	Draft Determination
New obligations for RIIO-2	Companies to publish updates to the digitalisation strategy at least once every two years and updates to the digitalisation action plan at least once every six months.	Same as FD
Applied to	All	Same as FD
Licence reference	Special Condition 9.5	Same as FD

Final Determination rationale and Draft Determination responses

- 4.32 We received 18 responses on whether the proposed licence obligation supports the delivery of a digitalised energy system and the frequency for the publication of updates to the Digitalisation Strategy and the Digitalisation Action Plan.
- 4.33 We have decided to implement our Draft Determinations proposal for networks companies to publish a Digitalisation Strategy and Action Plan (DSAP). Network companies and other stakeholders broadly agreed that the licence obligation supports the delivery of a digitalised energy system and will maximise the value of data to consumers. WPD and NGET expressed dissatisfaction that they had not seen the DSAP guidance yet and NGGT and NPG also felt unable to comment without seeing the guidance.
- 4.34 We believe that we have provided opportunities for network companies and all other stakeholders to plan for the guidance and to help adapt it, where changes are required. In May 2020 we stated in our open letter to network companies on their Digitalisation Strategies that the letter would form the starting point for the DSAP guidance¹⁶. We also hosted a series of meetings with all network companies during August 2020 where we discussed our expectations for the Digitalisation

¹⁶ [RIIO Digitalisation strategies](#)

Strategy and Action Plans. Since October 2020 we have hosted further meetings, getting licensee's feedback and input on the development of the guidance.

- 4.35 We published an early draft the DSAP guidance¹⁷ on 10th November 2020 and have planned a series of public workshops for December 2020¹⁸ to gain further feedback. We will also consult on the DSAP guidance in the first quarter of 2021.
- 4.36 We have decided to amend our Draft Determinations proposals slightly to require the publication of a Digitalisation Strategy every two years, and an Action Plan every six months or such other period as directed by the Authority. This was supported by the majority of respondents; however, Cadent, the ESO, and SGN felt annual updates to the Action Plan would be more appropriate and reduce the regulatory burden on companies. ENWL stated that the requirement for the Action Plan to be updated every 6 months was too frequent.
- 4.37 We remain of the view that updates to the Action Plan should be published every 6 months. However, considering Draft Determinations responses, we have decided to include in the licence the option for the Authority to direct an alternative time period for the publication of updates to the Digitalisation Strategy and Action Plan. We will direct less frequent periods where we think this is in consumers interests.
- 4.38 Cadent and NGGT also proposed that updates should align with scheduling for the publication of other strategy documents, such as the Innovation Strategy, to reduce regulatory burden.
- 4.39 We expect that digitalisation programmes will benefit from frequent opportunities for stakeholders to give feedback and influence the ongoing development of digital/data products and services. We also expect the burden of communicating progress with stakeholders on digitalisation will be small. We will, however, include a question in our guidance consultation on whether it is appropriate to align updates to the Action Plan with existing timelines for other strategy documents.

¹⁷ <https://www.ofgem.gov.uk/publications-and-updates/early-draft-digitalisation-strategy-and-action-plan-guidance-available>

¹⁸ Registration for DSAP Guidance Workshops is available [here for workshop 2](#) , [here for workshop 3](#), and [here for workshop 4](#).

Data Best Practice*Final Determination*

Output parameter	Final Determination	Draft Determination
New obligations for RIIO-2	Companies to use Energy System Data in accordance with Data Best Practice guidance. In particular, the guidance will include the principle of Energy System Data being treated as "presumed open" ¹⁹ .	Same as FD
Applied to	All	Same as FD
Licence reference	Special Condition 9.5	Same as FD

Final Determination rationale and Draft Determination responses

- 4.40 We received 19 responses on whether the proposed Licence Obligation supports the delivery of a digitalised energy system and what kinds of data should be required to comply with the Data Best Practice guidance, in order to maximise benefits to consumers.
- 4.41 We have decided to implement our Draft Determinations proposals to introduce a requirement for network companies to comply with our Data Best Practice guidance through a principles-based approach. Network companies and other stakeholders broadly agreed that the Licence Obligation supports the delivery of a digitalised energy system and will maximise the value of data to consumers. However, SSE and SGN questioned whether it is appropriate for a Licence Obligation to require compliance with 'best practice' through a principles-based approach, rather than a more prescriptive standards or actions-based approach to regulation.
- 4.42 Whilst we understand the concern around using a licence obligation to enforce 'best practice', we have decided it is appropriate to do that because consumers' needs for data and digital services are continuously evolving.
- 4.43 The principles-based regulation and explicit standards can be compatible with one another. If circumstances arise where we consider that explicit data standards are required, we will consider whether it is appropriate to modify the licence obligation or whether the Data Best Practice Guidance should be amended. Any modification

¹⁹ For more information about data being treated as "presumed open", see the [EDTF report](#).

to the licence condition would require us to follow the statutory modification procedure, including consulting on the proposed change.

- 4.44 We have decided to continue to engage with stakeholders to determine what data should comply with Data Best Practice guidance when we consult on it, and the DSAP guidance, in Q1 2021. The Licence Obligation will refer to the Data Best Practice guidance for the definition of what data must comply. Respondents supported this decision as they thought it short-sighted to agree on what data would be appropriate at this time and that views of wider stakeholders in the industry need to be considered.
- 4.45 Nonetheless, respondents provided a range of suggestions for the data, including: assets, usage and constraints; distributed energy resources; connection costs; half-hourly settlement; customer data; annual additional capacity; new innovations/solutions rejected by networks. Some respondents mentioned the need for data to not just be made open, but also standardised and interoperable for ease of use. The types of data proposed by respondents to this consultation all appear reasonable, however, we note that some of the data mentioned is unlikely to be data that energy network companies hold and so is a moot point for the purposes of Final Determinations.

Stakeholder Engagement Incentive (SEI)

- 4.46 We have decided not to include a common reputational ODI for stakeholder engagement because we have not identified comparable performance metrics which can appropriately monitor performance across all the companies. As at Draft Determinations, we welcome the ambition shown in the companies' engagement strategies and encourage network companies to report on their engagement activities and commitments through annual reporting directly to their stakeholders. Several stakeholders supported our expectation that stakeholder engagement should be considered business as usual.
- 4.47 Some stakeholders asked us to reconsider a common ODI for stakeholder engagement, but did not demonstrate suitable, comparable performance metrics that could be used.
- 4.48 A consumer representative group noted that there should be a common financial ODI to improve stakeholder engagement consistently across all the companies. We do not think a common financial ODI is appropriate as we have rewarded good

stakeholder engagement through the RIIO-1 SEI, and we stated in our SSMD that we expect this to now be business as usual. We think that the stakeholder engagement strategies and commitments which were included in the BPs will ensure the companies continue to engage effectively with their stakeholders on an ongoing basis. The strategies were developed through stakeholder engagement so reflect their stakeholder's preferences. As set out in Chapter 3 of this document, we have decided to review the role of the Groups and will consider if they should monitor progress on the engagement strategies as part of that review.

Maintain a safe and resilient network

Workforce Planning

- 4.49 We made our decision on workplace planning in our SSMD. In the lead up to the Final Determinations, we have been contacted by the trade unions to request assurance that network companies are expected to consider workforce resilience issues during RIIO-2.
- 4.50 We, therefore, confirm our SSMD decision that network companies should plan for a workforce fit for the future, delivering a modern, diverse, high quality, well-trained, resilient workforce within their baseline allowance, without any additional funding, output measures or incentives. All networks included details of their objectives to ensure a resilient and representative workforce in their RIIO-2 BPs.
- 4.51 Whilst we do not consider it appropriate to set specific targets for workforce resilience, we expect companies to deliver on their plans to meet these challenges and report on their progress. Companies need to attract, develop and retain a workforce in sufficient numbers, with the right skills, from a diverse range of backgrounds if they are to successfully meet the outputs set in the RIIO-2 price controls and continue to deliver what is expected of them in the years to come.

Cyber Resilience Operational Technology (OT) and Cyber Resilience Information Technology (IT)

- 4.52 Our decisions for each company's cyber resilience OT and IT outputs are confidential and not discussed in this document in the interests of national security. Our decisions for each company are detailed in confidential annexes. We have shared cyber resilience confidential annexes with each company.

Physical security

- 4.53 Our decisions for each company's physical security outputs are discussed in Chapter 3 of Company Annexes.

Climate resilience

- 4.54 In addition to efforts to reduce carbon emissions, the energy networks must prepare for the impacts of an already changing climate. Assessing the risks and responding to the climate risks are the responsibility of the network companies and an increasingly important part of network resilience. The price control framework allows network companies to identify and respond to climate risks through the funding provided for resilience measures, included in their baseline allowance.
- 4.55 In response to our Draft Determinations, some stakeholders have said that they want more information about how the companies are managing climate change risk. We agree that sharing information amongst key industry participants and stakeholders is vital in ensuring a secure, reliable and resilient energy system. We expect companies to take a more proactive approach to reporting on their climate resilience planning and activities.
- 4.56 To ensure adaptation to climate change continues to be appropriately planned for, we think that the companies should make the most of opportunities to cooperate with others on research, scenario planning and sharing best practice. There will be several collaboration opportunities over the course of RIIO-2, including the work being undertaken by the electricity distribution network companies and a research programme being led by BEIS to support and inform its domestic and international climate change work streams.

NARM

- 4.57 Our decisions for each company's NARM outputs are discussed in the NARM Annex and in Chapter 3 of Company Annexes.
- 4.58 For all sectors, we will undertake a final reconciliation process between Final Determinations and RIIO-2 implementation (see NARM Annex for further detail). This is to ensure that final NARM targets and allowances accurately reflect our Final Determinations decisions. For GD, ET, GT, we will use this process to finalise the Baseline Network Risk Output and Unit Cost of Risk Benefit measures. For the

GD, we will also finalise the NARM baseline allowance. Any adjustments to NARM baseline allowances will only change the share of totex attributable to NARM, but the value of totex will remain unchanged from our Final Determinations decisions.

Large Project Delivery (LPD)

- 4.59 We have decided to implement our LPD financial ODI framework that may be applied to large (£100m+) projects on a project-by-project basis.
- 4.60 Either one of the following two mechanisms will be applied to remove any financial benefit to the network company from delay:
- Re-profiling – When projects are delivered late, we will re-profile the allowances provided to a network company in its licence to reflect actual expenditure, to avoid the network company benefitting from delayed expenditure
 - Milestone-Based Approach – Instead of the Re-profiling mechanism, we may set project allowances based on the delivery of specific, pre-agreed, milestones. The allowances would only be granted following confirmation that a milestone had been delivered.
- 4.61 In addition, the following mechanism may be applied to reduce the consumer detriment caused by a delay:
- Project Delay Charge – For each day that a project is delivered late, network companies would pay a pre-agreed day-rate charge to compensate GB consumers for the late delivery.
- 4.62 We have decided to implement our Draft Determinations proposal to leave open the possibility of applying these mechanisms in the GD and GT sectors. However, we expect that these mechanisms will be most relevant to the ET sector. This is because we expect to see the majority of high value projects where late delivery would be most likely to cause a material detriment to GB consumers in ET. For this reason, the mechanisms and our rationale for introducing them are set out in the ET Sector Annex.

Deliver an environmentally sustainable network

Environmental Action Plans and Annual Environmental Report

Purpose: The purpose of the Environmental Action Plans (EAP) is to ensure network companies take responsibility for their impacts on the environment, contribute to decarbonising the energy system and support GB's environmental objectives. The purpose of the Annual Environmental Report (AER) is to ensure transparent and comparable reporting on the environmental performance of gas and transmission networks.

Benefits: The reduction of adverse environmental impacts of operating gas and transmission networks, and protection and enhancement of the natural environment for existing and future consumers.

Final Determinations

Environmental Action Plans

Output parameter	Final Determination	Draft Determination
ODI type	Reputational	Same as FD
Measurement	Licensee's business carbon footprint (BCF) (scope 1 and 2 emissions excluding electricity losses/gas leakage); tonnes of carbon dioxide equivalent emissions (tCO ₂ e)	Same as FD
Performance target	Licensee's BCF reduction target for the end of RIIO-2	Same as FD
Reporting method	Annual RRP reporting and the AER	Same as FD
Applied to	All Transmission and Gas Distribution licensees	Same as FD
Licence condition	No	Same as FD

Annual Environmental Report

Output parameter	Final Determination	Draft Determination
Licence obligation	Publish an Annual Environmental Report, including progress in achieving their EAP commitments and relevant ODIs, PCDs and UMs and an annual update on the environmental impact of their network.	Same as FD
Applied to	Cross-sector licence obligation - All ET, GT, and GD companies.	Same as FD

Output parameter	Final Determination	Draft Determination
Licence reference	Special Condition 9.1	Same as FD

Final Determination rationale and Draft Determination responses

4.63 We received 23 consultation responses to our proposals on the EAP and AER from a diverse range of stakeholders.

4.64 We have decided to implement our Draft Determinations proposals to accept to accept the majority of commitments in companies' EAPs. Further detail of our decisions on these is in Chapter 2 of Sector Annexes and Chapter 2 of Company Annexes.

ODI-R on companies' BCF reduction targets

4.65 We have decided to implement our Draft Determinations proposals to introduce an ODI-R for electricity transmission companies (ETOs) and GDNs on their respective BCF reduction target for the end of RIIO-2.²⁰ Nearly all respondents supported this. However, one network company considered it would have limited value because it will already be publicly reported, under the AER licence obligation. Conversely, an infrastructure supplier said that if reducing BCF is a priority for Net Zero, there should be a specific symmetrical ODI-F rather than a reputational ODI that may not prioritise measures with the biggest impact. In addition, a network company asked for more clarity on the definition of the BCF reduction targets that will be used in the ODI-R.

4.66 We disagree that an ODI-R on the BCF reduction will have limited value because:

- the ODI-R elevates the regulatory status of the companies' BCF reduction targets, such that Ofgem will regularly review each company's progress through the annual regulatory reporting cycle. Regular monitoring (and inclusion in Ofgem's sector-specific price control annual report) is appropriate given the relative importance that stakeholders attach to this aspect of the network companies' environmental performance

²⁰ We are not proposing to include an ODI-R on NGGT's BCF at this stage. Due to the considerable uncertainty around the future gas pathways to Net Zero, NGGT is not in a position to have a robust SBT, which relies on the company have a delivery programme to meet the targets. Therefore, we think it is reasonable that NGGT do not have a SBT at present, and that their expected timeframe of 2023 is appropriate. NGGT will be required to publish information on its BCF in the Annual Environmental Report.

- all the companies included some EAP commitments that are expected to directly contribute to BCF reductions. Therefore, an ODI-R on BCF reductions is a reasonable indicator of the delivery and effectiveness of each companies' EAP commitments related to reducing their BCF
- there is a well-understood methodology for measuring BCF reliably that is widely adopted by the companies, which means it is comparable and makes it well-suited to an ODI-R.

4.67 We have considered whether a financial ODI on BCF reduction would be better to encourage companies to prioritise measures with the biggest environmental benefit. In our view, the ODI-R, alongside EAPs, AER and mechanisms, such as PCDs, is a preferable approach. This combined approach allows companies to have certainty about cost recovery for measures with the biggest potential to reduce the companies' BCF. This is particularly important for those that have significant upfront capital costs, which companies are unlikely to prioritise if they had to rely on recovering the cost from an annual incentive over the five-year price control period, as would be the case under a financial ODI. In addition, where appropriate, we have considered the lifetime costs and benefits of the measures in companies' EAPs to ensure that consumers only pay the efficient cost of these. Lastly, mechanisms such as the AER and PCDs also provide assurance to consumers that the companies are accountable for delivery of such measures.

Definition of BCF targets to be used in the ODI-R

4.68 We have decided that the ODI-R will be defined as each company's reduction target for scope 1 and 2 emissions excluding electricity losses and gas shrinkage at the end of RIIO-2.²¹ This definition of BCF is a subset of the network companies' science based greenhouse gas targets that are verified with the SBTi.²² The ODI-R BCF target will be interpolated for end of RIIO-2 from each companies' science-based target that are typically longer (up to maximum 15 years from date of validation by the SBTi).

4.69 We think this BCF definition is the most appropriate for the ODI-R because it covers CO2 equivalent emissions which are under the direct management control

²¹ As defined by the [GHG Protocol Corporate Accounting and Reporting Standard](#)

²² The SBTi is a collaboration between the Corporate Disclosure Project, World Resources Institute, World Wild Life Fund for Nature and the United Nations Global Compact who independently assess and approves companies emission reductions targets as 'science-based' if they are in line with what the latest climate change science says is necessary to meet the goals of the Paris Agreement – to limit global warming to well-below 2 degrees Celsius above pre-industrial level and pursue efforts to limit warming to 1.5 degrees Celsius.

of the licensee, and for which all companies have established a reliable monitoring and reporting methodology.

- 4.70 We have decided to not mandate a specific baseline year because we think that this is unnecessary owing to the SBTi requirement²³ that companies' baseline year must not be earlier than two years prior to submission for an official validation. This should mean that the companies are using baseline years that are similar in timing to set their reduction target.

Annual Environmental Report

- 4.71 We have decided to introduce a licence obligation for all companies to publish an Annual Environmental Report. All respondents supported this, noting that this approach should help ensure transparent and regular updates on progress in a structured and comparable way. However, some of the respondents questioned whether it would be sufficient to ensure delivery, particularly in the context of a financially tighter price control.
- 4.72 We considered the application of financial incentives for EAP commitments but concluded this was not appropriate for all sectors at this stage. This is explained further in sector annexes. However, we consider the AER to be a sufficient safeguard against the risk that a licensee does not deliver on commitments, as it is a public facing report that will be visible to stakeholders keen to see progress.
- 4.73 Three CEGs noted that they expect to have an ongoing role to scrutinise the extent to which companies' EAP commitments are met in RIIO-2. We agree this could be a future role for networks CEGs and UGs, subject to the review of the Groups that will take place following Final Determinations. For more information, see Chapter 3 of this document.
- 4.74 Seven stakeholders expressed concerns about the lack of a mechanism to encourage all of the network companies to go beyond their EAP commitments/targets during RIIO-2. Some of these stakeholders highlighted that Ofgem's rationale for our Draft Determination proposal to accept the bespoke Environmental Scorecard ODI-F put forward by National Grid Gas Transmission and National Grid Electricity Transmission should apply across all networks. This point is further considered in the GD and ET sector specific annexes.

²³ SBTi criteria for greenhouse gas reduction target setting are available at: <https://sciencebasedtargets.org/wp-content/uploads/2019/03/SBTi-criteria.pdf>

4.75 Some stakeholders also raised a number points on the AER which we will consider when developing the AER reporting guidance. These include:

- ensuring consistent definitions and common reporting standards
- aligning proposed metrics with the United Nations Sustainable Development Goals
- ensuring clarity on the level of ambition companies have signed up to in terms of their science-based greenhouse gas reduction targets
- reporting on climate change adaptation, particularly where these include nature-based solutions
- ensuring clarity on EAP commitments that have been allocated allowances in the baseline.

4.76 Companies will be required to list all their EAP commitments in their AER including their associated targets. We will continue to work with stakeholders through the development of the AER reporting guidance, that will be consulted on following Final Determinations, to ensure targets (eg for BCF reduction) are clearly set out in the AERs.

5. Ensuring efficient cost of service

- 5.1 In this Chapter, we provide an overview of our decisions in setting RIIO-2 total expenditure (Totex) allowance for all GDNs and TOs. We set out our decisions on ESO allowances in Chapter 4 of the ESO Sector Annex.
- 5.2 Totex allowances are a material component of customers' bills now and in the future, and it is important that customer bills reflect efficient investment decisions and costs.
- 5.3 In their BPs, companies forecasted a total expenditure of just over £24bn. 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 widespread provision for the use of uncertainty mechanisms, which may provide 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 Final Determinations allow companies to maintain high quality services for consumers, be flexible enough to adapt to the needs of the future energy system, while ensuring value for money for consumers.
- 5.4 We applied consistent principles for cost assessment across sectors but have used different approaches where appropriate to account for sector specific considerations.

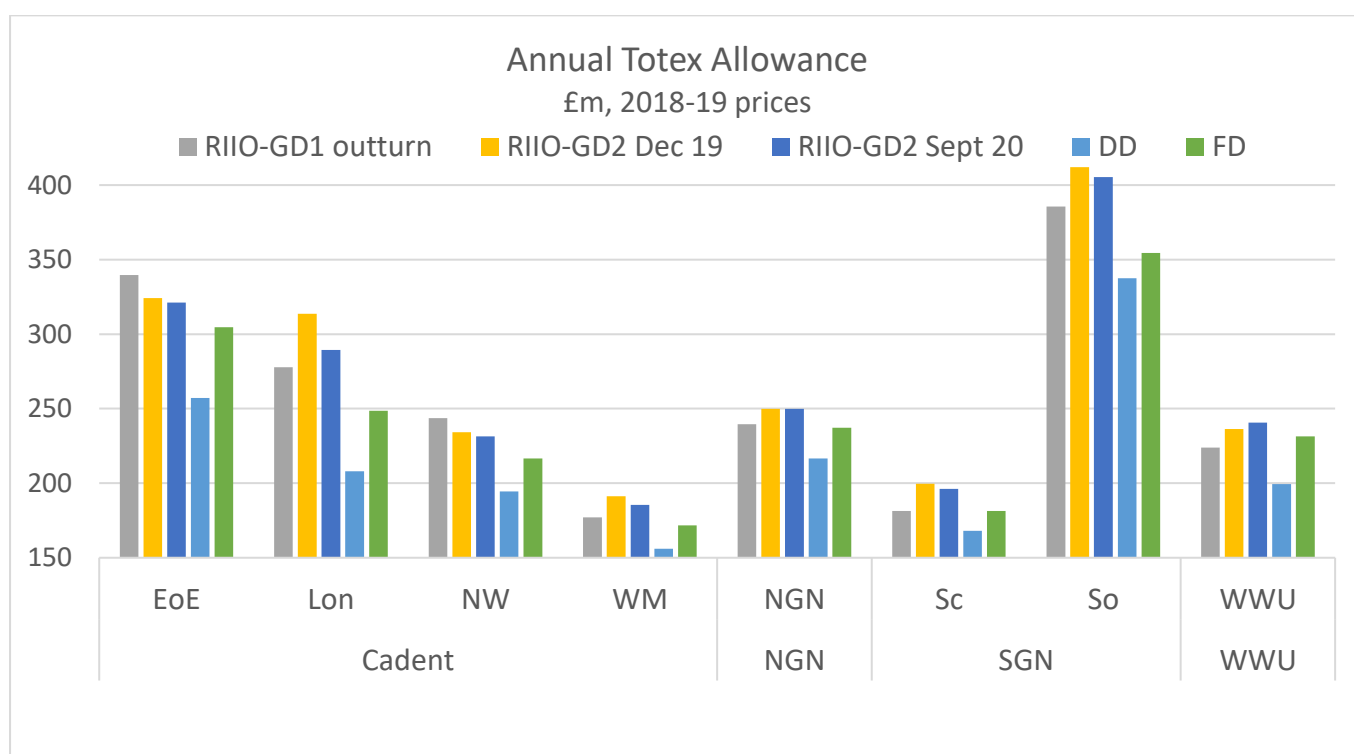
Efficient Totex allowances

- 5.5 We have set GDNs and TOs' baseline Totex allowances at £20.3bn, where there is certainty on the need for the proposed work, and where there is sufficient certainty on the efficient cost of delivery.
- 5.6 Our set baseline Totex allowance is £4.1bn higher compared to our Draft Determinations proposals, based on adjustments made after considering additional information and justifications submitted by network companies in their Draft Determination responses.
- 5.7 Around 50% of baseline Totex for GDNs and around 70% of baseline Totex for TOs is linked to mechanisms, such as PCDs and volume drivers, to ensure companies are only paid for what they deliver.

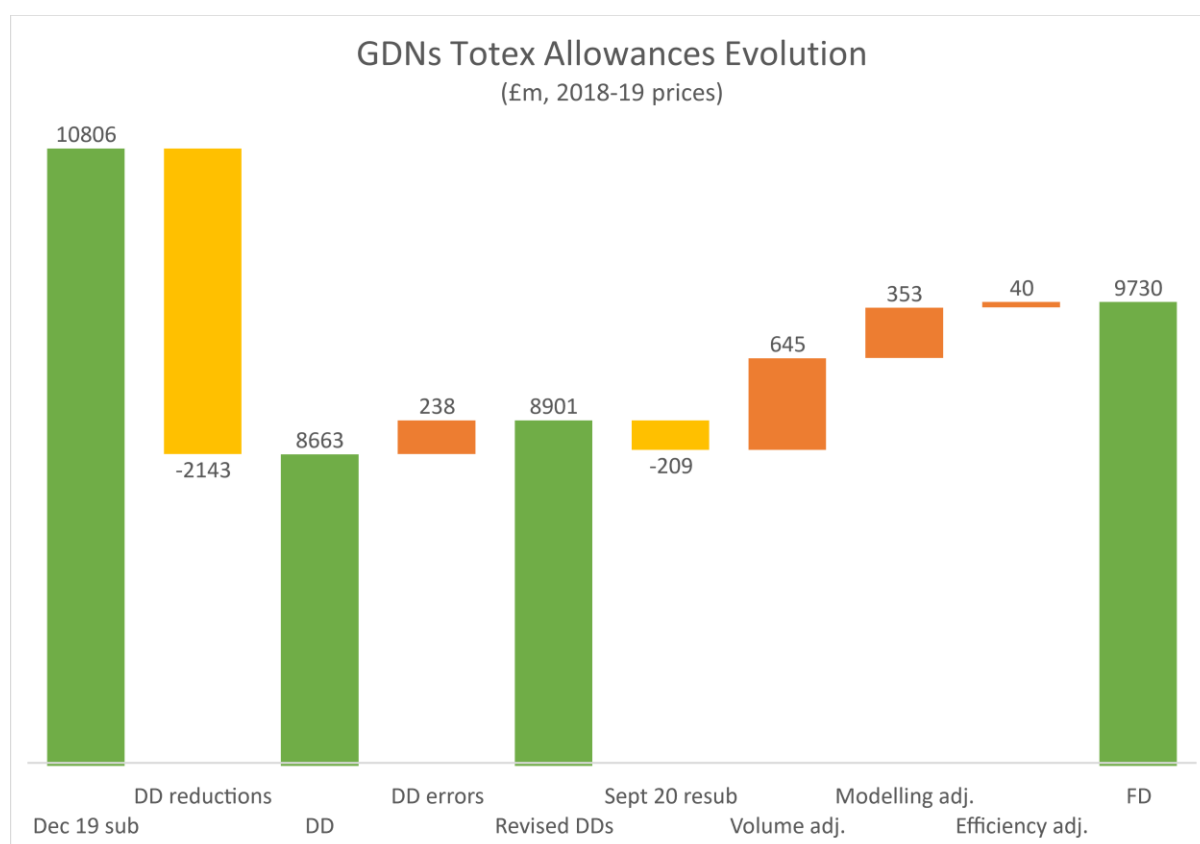
Efficient Totex allowance for GDNs

5.8 Figure 3 shows the annualised baseline Totex allowance comparison for each GDNs, with our Final Determinations (FD) compared to Draft Determinations (DD), revised company RIIO-GD2 submissions in September 2020, original RIIO-GD2 submission in December 2019, and RIIO-GD1 outturn.

Figure 3: GDNs' Totex comparison



5.9 For GDNs, we have decided to set a baseline Totex allowance of £9.7bn overall. This equates to a reduction in overall Totex allowances of £1.1bn against what was proposed in the GDNs' BPs submitted in December 2019, but an upward adjustment of £1.0bn compared to our Draft Determinations. Figure 4 provides an overview of the key components of these adjustments.

Figure 4: Adjustments to GDNs' Totex allowances

5.10 The key drivers for the upward adjustments in baseline Totex allowances for GDNs, from our Draft Determinations to this Final Determinations position, are as follows:

- we identified and resolved in collaboration with GDNs some technical errors in the modelling supporting our published Draft Determinations, leading to additional monies overall for GDNs at Final Determinations
- we have accepted material additional Repex, IT and Capex workload allowances following further evidence received from the GDNs that was well justified
- additional monies are provided as a result of some key modelling changes we have made to our Totex model, especially in relation to treatment of Multiple Occupancy Buildings and other Regional Factors reflecting well justified higher costs seen by GDNs in different parts of the UK versus a notional average company
- In the light of additional evidence received, we have adopted a small reduction of the cost efficiency challenge we set in our Draft Determinations

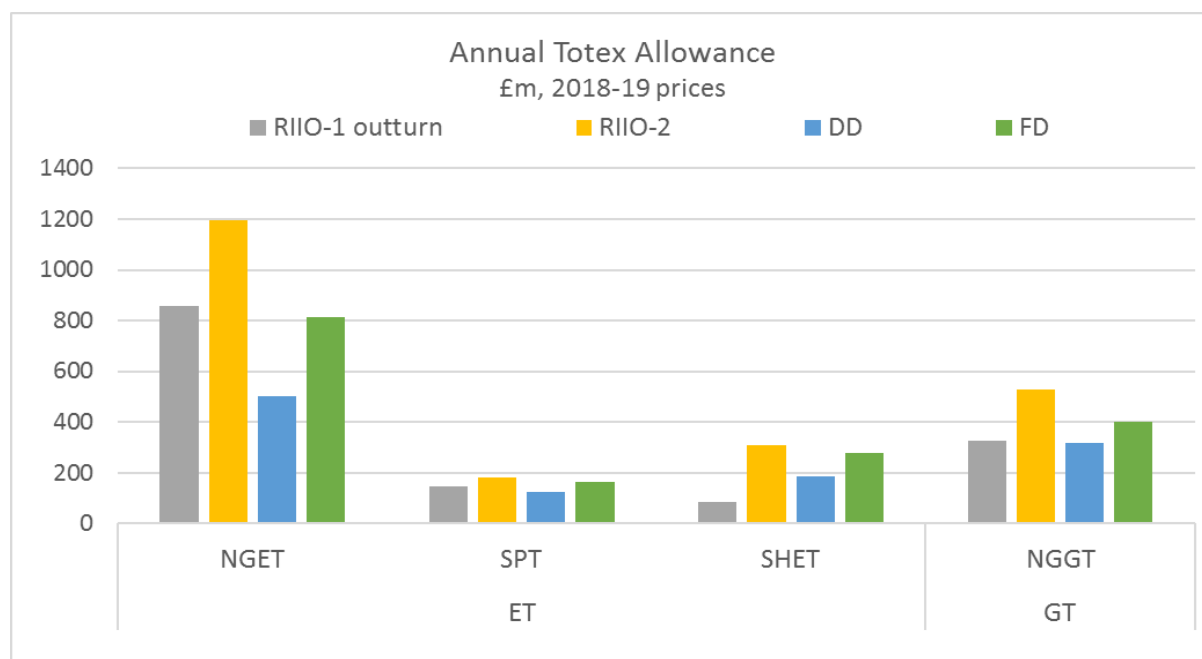
for each of (1) catch-up efficiencies for less efficient GDNs as set by our notional company performance benchmarking; and (2) ongoing efficiencies expected year on year from all GDNs.

5.11 We believe the resulting Final Determinations for baseline Totex allowances provide GDNs with funding to maintain a safe and resilient gas distribution network, enabling GDNs to meet their statutory obligations and operational business needs, as well as to meet the expectations of their customers and wider stakeholders, and to do so in a cost-efficient manner which protects the interests of both existing and future consumers.

Efficient Totex allowances for TOs

5.12 Figure 5 shows the baseline Totex for all TOs, excluding load related capital expenditure because direct comparison of RIIO-T2 baselines against RIIO-T1 actual rate of expenditure would be misleading. This is because the RIIO-T1 actual expenditure for load reflects all of the costs covered both by the price control baseline allowances and the RIIO-T1 uncertainty mechanisms. By comparison, our baseline allowances for RIIO-T2 do not reflect the impact of uncertainty mechanisms.

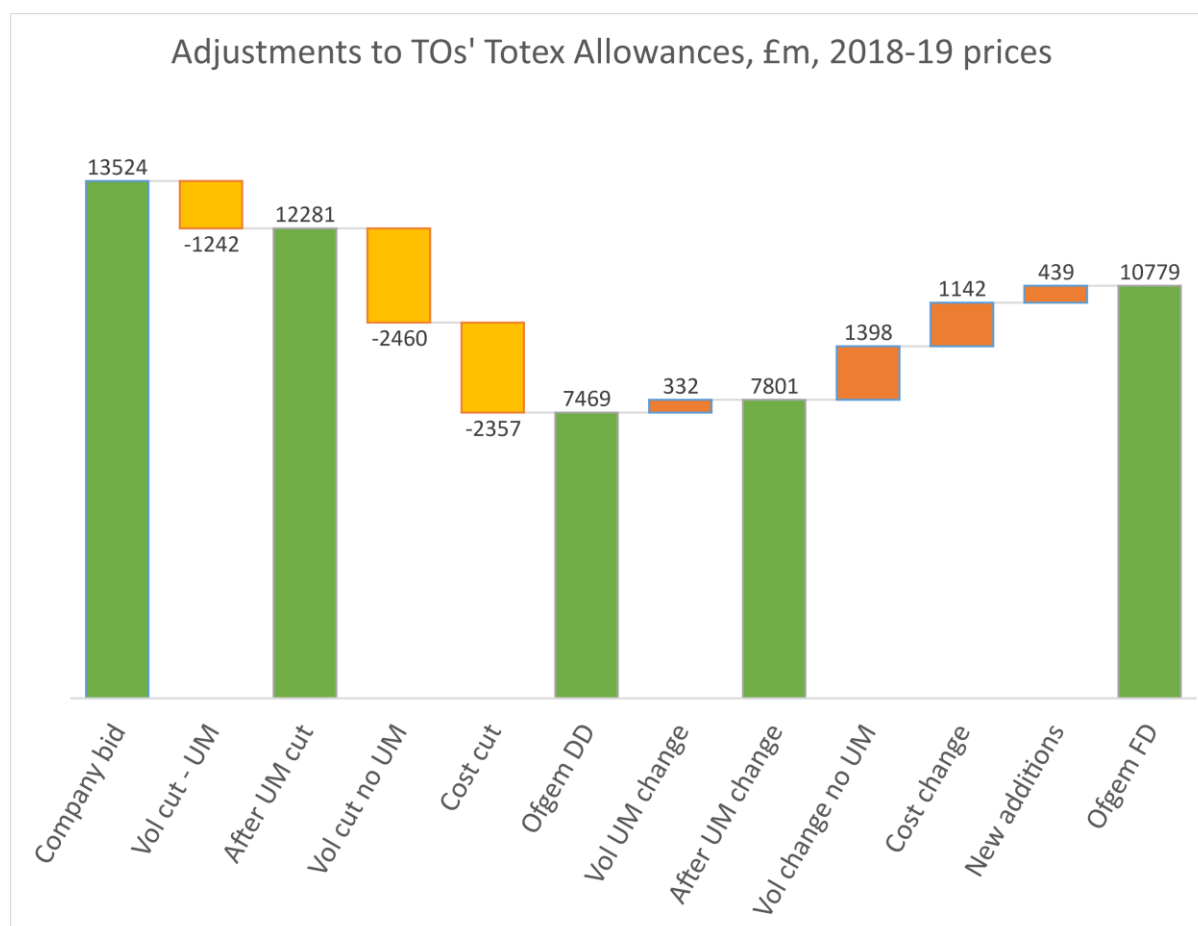
Figure 5: TOs’ Totex comparison (excluding load related capex)



5.13 For TOs, we have decided to set a baseline Totex allowance of £10.8bn overall. This equates to a reduction in overall Totex allowances of £2.7bn against what

was proposed in the TOs' BPs submitted in December 2019, but an upward adjustment of £3.3bn compared to our Draft Determinations. Figure 6 provides an overview of the key components of these adjustments.

Figure 6: Adjustments to TOs' Totex allowances



5.14 The key drivers of upward adjustments in baseline Totex allowances for the TOs, from our Draft Determinations to Final Determinations, are:

- All TOs provided additional justification for volumes of work that we proposed to reject in our Draft Determinations. This included new or enhanced Engineering Justification Papers (EJPs) and updated IT project justifications
- Some companies also provided revised Business Plan Data Templates (BPDTs) to facilitate the reprocessing of their submission through our cost models. These included new capital expenditure elements which have added to the overall levels of approved capex
- Our indirect opex modelling was unintentionally capping annual allowances, which led to underestimates of allowances for some companies at Draft Determinations. This has been rectified and led to increased allowances in this

area. Further, we have given allowances to compensate companies for additional costs that are unique to companies (e.g., gas safety costs) and outside of the scope of the model

- We implemented changes that we had signalled in our Draft Determinations such as accepting updated projects signalled by the ESO since the original BP submission. We also corrected for data that had been entered incorrectly in the BPDTs and so had not been processed at Draft Determinations.

Efficiency challenge

5.15 There are two types of efficiency challenge that we apply to energy companies: a catch-up challenge, where the less efficient firms are encouraged to catch up with the more efficient – or frontier – ones, and an ongoing efficiency challenge, where even the most efficiency companies must improve by becoming more productive each year, driving the best value for consumers.

5.16 We apply the catch-up challenge differently in GD and T (this includes ET and GT) because the sectors have different sectoral characteristics, which need to be considered. In GD, we have used a benchmarking model to apply catch-up efficiency, whereas in T, we have used a bottom-up cost assessment (although we do use a benchmark to determine opex cost categories). The catch-up efficiency challenge is worth approximately £400m for GD, and £700m for T. These decisions have been formulated at a sector level and are set out in Sector Annexes.

5.17 We apply the ongoing efficiency challenge consistently across GD and T, and to the same pool of costs. The ongoing efficiency challenge is worth approximately £460m for GD and £620m for T. Our decisions relating to ongoing efficiency are set out below.

Ongoing Efficiency (OE)

5.18 Our ongoing efficiency challenge reflects the productivity improvements that we consider even the most efficient company can achieve. We consider that ongoing efficiency improvements are largely within a company's control and can be generated in a variety of ways, eg through effective management of capital, approaches to staffing and delivery (contracting/outsourcing), collaboration

between companies, employing new technologies, or effective investment in innovation.

- 5.19 Setting a suitably stretching ongoing efficiency challenge ensures value for money for consumers. By setting an ambitious ongoing efficiency challenge for RIIO-2, we will incentivise networks to continually strive to identify and exploit opportunities to optimise their processes and operations, ensuring they adapt to change and deliver value to consumers.

Final Determination

Output parameter	Final Determination	Draft Determination
Ongoing efficiency	Apply an ongoing efficiency challenge of 1.15% per year for capex (and repex), and 1.25% for opex for all network companies.	Apply an ongoing efficiency challenge of 1.2% per year for capex (and repex), and 1.4% for opex for all network companies.
Applied to	Cross-sector - All ET, GT, and GD companies	Same as FD

Final Determination rationale and Draft Determination responses

- 5.20 We will apply an ongoing efficiency challenge of 1.15% per year for capex and repex, and 1.25% for opex for all network companies.
- 5.21 We have decided to set a stretching ongoing efficiency challenge that 'aims up' within the range considered by our consultants, CEPA. We believe TFP and labour productivity measures from sources like the EU KLEMS could underestimate the scope for efficiency gains within regulated sectors such as electricity and gas networks in GB. This is because, not only are network companies less exposed to negative shocks, but also the lack of competitive pressure means they should be able to place greater management focus on driving high efficiency gains. This supports an OE challenge at the top end of the range proposed by CEPA. Our decision to aim up is consistent with Ofwat's approach in PR19 and should drive performance in RIIO-2.
- 5.22 In reaching our decision on the OE, we have given some weight to Gross Output (GO) productivity measures, which have reduced the level of efficiency challenge. Nine respondents, including Gas Distribution and Transmission companies, argued that in our Draft Determinations, we placed too much weight on Value Added (VA)

methods of TFP Productivity and that some weight needed to be placed on Gross Output (GO) measures in line with regulatory precedent. Our decision reflects these responses. However, as we said at Draft Determinations, there are practical difficulties in estimating GO²⁴ that in effect limits the weight that can be reasonably placed on GO compared to VA measure. We do not think precedent suggests we must place equal weight on GO and VA, as other regulatory decisions (eg RIIO-ED1) have also placed more weight on VA. The methodology used to inform setting our OE challenge can be found in CEPA's report.²⁵

- 5.23 We are using the methodology set out in the CEPA report²⁶ to estimate OE, as per our Draft Determinations. Six stakeholders, including three TOs and two GDNs, thought that CEPA and Ofgem placed too much weight on trends in productivity growth during the pre-financial crisis business cycle (1997-2006), used a set of comparator industries that was too wide, and used weighting that was not reflective of costs. No stakeholder provided compelling evidence to lead us to revise our position. A more detailed discussion relating to these methodological issues can be found in CEPA's report.²⁷
- 5.24 We have decided to set an ex-ante value for OE, while indexing RPEs. Several respondents argued that this approach is inconsistent. However, no respondent was able to put forward an alternative methodology for indexing OE. We think doing so would add unnecessary complexity to the price control for little material gain, and without existing appropriate productivity indices, this may not even be possible.
- 5.25 We will not make specific COVID-19 adjustments to our OE challenge. Several respondents raised issue with Ofgem's lack of consideration of any potential impact of COVID-19. We asked CEPA to undertake work on our behalf to assess the implications of COVID-19 on ongoing efficiency. CEPA concluded that: 'it remains very hard to make a confident judgement about the impact of COVID-19 on productivity and real input prices for the energy network sector even over the initial years of the RIIO-2 period, let alone the whole period. This would be a major challenge in implementing an ex-ante adjustment as part of the Final Determinations process, rather than relying on existing or new uncertainty mechanisms to respond once more and better information is available'. CEPA's full

²⁴ CEPA (Nov 20), RIIO-GD2 and T2: Cost Assessment – Advice on Frontier Shift policy for Final Determinations, 13 November 2020.

²⁵ Ibid.

²⁶ Ibid.

²⁷ Ibid.

analysis can be found in the CEPA paper.²⁸ Our decision is therefore to address any potential impacts of COVID-19 as part of the RIIO-2 closeout process. By waiting until closeout, we will ensure we have sufficient time series data to make a proper assessment of whether COVID-19 has had any impact on the trend level of ongoing efficiency. In relation to PR-19, the CMA was also of the view that Ofwat should consider the impacts of COVID-19 as part of an industry-wide process, rather than attempting to estimate any specific adjustment to OE. This is line with our decision to consider COVID-19 impacts as part of our RIIO-2 closeout, as set out in Chapter 12.

- 5.26 Our OE decision reflects our view that the innovation funding provided by consumers since 2007 should deliver efficiency benefits over and above those achieved in the wider economy, in comparator sectors, and beyond the range indicated by EU KLEMS. Some TOs, GDNs, and other stakeholders argued that the innovation challenge represents double counting as the EU KLEMS dataset used in the assessment already captures productivity growth resulting from innovation. We also note CEPA's comments in relation to innovation funding. We believe the energy sector has enjoyed explicit and additional innovation funding over and above general allowances, and beyond any comparator sectors, including water. This funding has been totally unique to energy network companies. While companies will have baselined some savings from past innovation projects, this will only account for findings and benefits known at this point in time. We would expect to see additional benefits come to light over the course of RIIO-2, as the full benefits of past innovation continue to be realised and all benefits become known. An additional innovation challenge over and above that indicated by EU-KLEMS and set for the water sector, is therefore reasonable and necessary in the energy sector.
- 5.27 To cross-check the headline 1.2% ongoing efficiency challenge, as a comparator we have analysed data provided to us by network companies under the RRP process in relation to efficiencies achieved to date in RIIO-1. Our high-level assessment indicated that NGN, as the frontier GDN for RIIO-GD1, was able to realise ongoing efficiencies of >1.2% per annum. The other GDNs have indicated they believe they have got closer to NGN as the frontier company over the course of RIIO-GD1. This provides us with further comfort that the headline 1.2% ongoing efficiency challenge for GDNs under RIIO-GD2 is not only reasonable but is achievable based on RIIO-GD1 performance formally reported to Ofgem by the

²⁸ Ibid.

GDNs. Similar high-level analysis indicates the same position for TOs and indeed NGET proposed 1.1% ongoing efficiencies which is only marginally lower than our Final Determination.

- 5.28 Our final decision is consistent with both regulatory precedent and expectations set out by the companies themselves. The CMA has made a provisional determination that OE in the water sector for PR19 should be 1.0%; this is reflective of a greater weighting being placed on productivity growth before 2007 than after, and an acknowledgment that EU-KLEMS data does not capture cost savings from quality improvements that are embodied in the inputs used by the water network companies. This is equally relevant for the energy sector.
- 5.29 We note that the most ambitious energy companies suggested they could achieve ongoing efficiencies of 1.0% Totex (SGN and SPT), and 1.1% opex (NGET and NGGT). We have decided to set ongoing efficiency for RIIO-2 reflecting on (a) differences between the energy and water sectors; (b) differences in specific relevant contextual circumstances (ie innovation allowances in RIIO-1); (c) the energy sector specific evidence and assessment under the RIIO-2 process; and (d) the responses of a wide range of stakeholders to our published Draft Determinations.

6. Ensuring efficient financing

- 6.1 In this Chapter, we set out our decisions on the financial package for RIIO-2. Our Final Determinations seek to reconcile the interests of companies and investors to those of consumers by setting an appropriate balance of risk and return. As set out in previous Chapters, we have incentivised companies to deliver stretching levels of efficiency and levels of service that improve over time. Our Final Determinations also seek to ensure that investor returns during RIIO-2 fairly reflect the levels of service and cost efficiency delivered for consumers and are commensurate with the level of risk that underpins their investment.
- 6.2 We have decided to set a tailored package of financing and incentive arrangements for the ESO. We set out those elements which are bespoke to the ESO in the ESO Sector Annex Chapter 5, while cross-referencing to the Finance Annex for those areas where the same approach is taken for all sectors. This Chapter generally does not capture ESO issues and decisions.

Final Determination

Output parameter	Final Determination (RIIO-2 forecast)	Draft Determination
Assessed cost of equity	4.55% (at 60% notional gearing)	4.2%
Expected outperformance	0.25% (at 60% notional gearing)	Same as FD
Allowed return on equity	4.30% (at 60% notional gearing)	3.95%
Allowed return on debt	1.82% Some notional company specific adjustments (SHET, SGN Scot, NGN, WWU). See Table 5 below	1.74%. No company specific adjustments for SGN Scot, NGN and WWU.
Notional gearing	See Table 5 below	Same as FD
Allowed return on capital	2.81% (for those that do not have notional company specific adjustment for debt)	2.63%

Table 5: Final Determination on the baseline allowed return on capital²⁹

Component	SHET	NGET & SPT	GT, SGN south, & Cadent	SGN scot, NGN, & WWU
Notional gearing	55.00%	55.00%	60.00%	60.00%
Cost of equity	4.25%	4.25%	4.55%	4.55%
Expected Outperformance	0.22%	0.22%	0.25%	0.25%
Allowed return on equity	4.02%	4.02%	4.30%	4.30%
Allowed return on debt	1.59% ³⁰	1.82%	1.82%	1.88%
Allowed return on capital	2.69%	2.81%	2.81%	2.85%

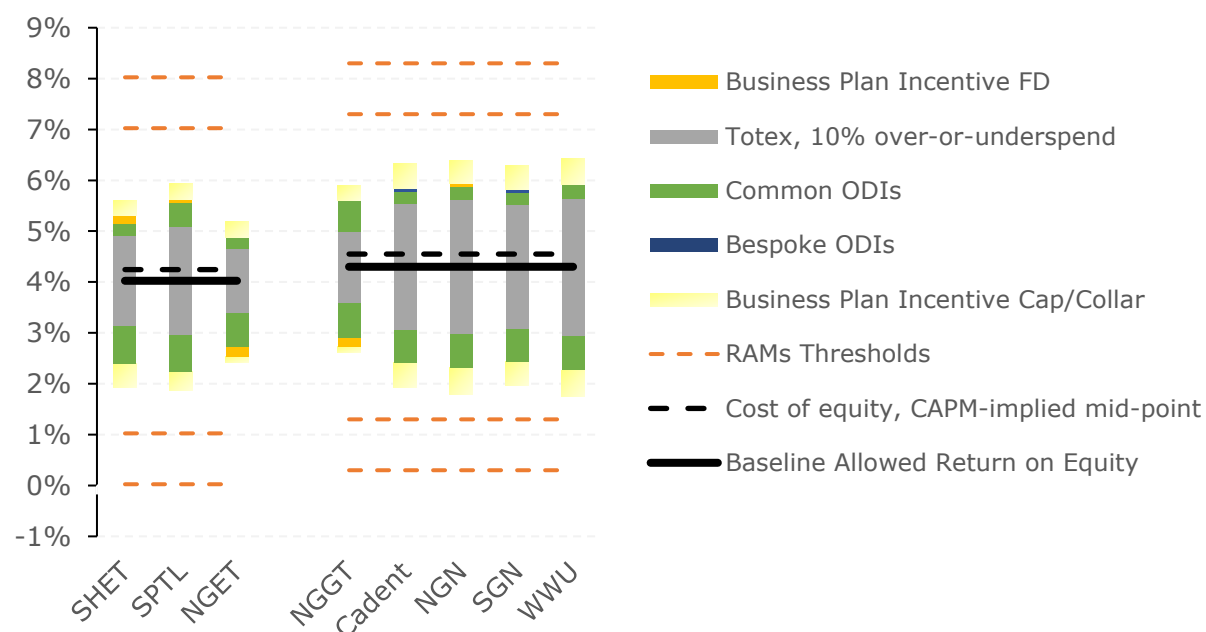
Final Determination rationale

- 6.3 Alongside Totex, several core aspects of our finance package are key determinants of a price control's impact on consumer bills. In line with the wider RIIO-2 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 decisions set the allowed return on capital at levels consistent with current evidence and market conditions.
- 6.4 The Finance Annex sets out our analysis and finance-related decisions in detail, including summaries of Draft Determination responses. The key elements of these decisions are summarised below.
- 6.5 Our finance-related decisions apply methodologies decided on in our SSMD and are calibrated to market evidence.
- 6.6 The allowed returns are the lowest ever determined for network companies and reflect the current historically low interest rate environment and calibration to market evidence. This will reduce costs for consumers while fairly compensating investors for the risks they face. We estimate that our decisions for the allowed

²⁹ We present here a forecast of allowed returns. Final allowances for debt and equity from 2022/2023 onwards will reflect changes in market observations. Totals may not add due to rounding. Please see Finance Annex for detail.

³⁰ SHET will have a RAV weighted cost of debt indexation mechanism, forecast shown is based on Ofgem FD totex scenario. Cost of debt forecast would fall to 1.49% in a Net Zero 2 totex scenario.

- returns on capital will save consumers approximately £2.8bn (18/19 prices), over a 5-year period, relative to RIIO-1.
- 6.7 The equity allowance decision reflects calibration of the three-step methodology decided on in our SSMD, namely Capital Asset Pricing Model (CAPM) analysis, cross-checks and an adjustment for expected outperformance.
- 6.8 Evidence suggests at least 0.25% outperformance can be expected by equity investors in RIIO-2. We have decided on a 0.25% adjustment (at 60% gearing) to account for this expectation. However, given our approach is novel, we have supplemented this by adding an ex post adjustment mechanism on a licensee basis to mitigate the risk that investors fail to earn equity returns in line with costs.
- 6.9 Our debt allowance reflects calibration to GD, ET and GT networks' expected average debt costs over RIIO-2. The allowance is to be based on an index of utility bond yields over a trailing average period starting at 10 years and extending to 14 years by the end of RIIO-2. Added to these yields will be a 0.25% allowance for additional costs of borrowing not captured in the index bond yields, including transaction and liquidity costs.
- 6.10 We have decided to index annually the two main components of WACC allowances (debt and equity allowances) such that both consumers and networks are protected from forecast error, with allowances changing as market rates change. Together these mechanisms reduce forecast risk, improve accuracy of allowed returns and are expected to aid in preserving medium term credit quality in different interest rate environments (compared to only indexing debt allowances as in RIIO-1).
- 6.11 Overall, the RIIO-2 price control exhibits lower systematic risk, with lower totex incentive rates, a narrower RoRE range (shown in Figure 7), and less exposure to macroeconomic interest rate environments than RIIO-1.

Figure 7: RIIO-2 RoRE ranges

Source: Ofgem Analysis

6.12 We consider all companies subject to RIIO-2 price controls can finance their activities based on the notional structure. Credit quality for notional network companies is, in the round, consistent with two notches above the minimum investment grade. We consider that efficient licensees can generate sufficient cash flows, allowing continuing investment in networks and services.

6.13 We have decided to implement a symmetrical return adjustment mechanism with threshold levels of:

- 300bps 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.

6.14 This mechanism will provide protection to consumers and investors in the event that network company returns are significantly higher or lower than anticipated at the time of setting the price control.

6.15 Further detail on all finance elements can be found in the Finance Annex and include our decisions and rationale for allowed returns, notional gearing, capitalisation rates, regulatory depreciation, indexation of RAV and allowances, return adjustment mechanisms, tax, pensions and other finance issues.

7. Managing uncertainty

7.1 In this Chapter we set out our decisions on managing uncertainty in RIIO-2. This Chapter does not apply to the ESO, except for cyber resilience and pass-through costs. Our decisions on managing uncertainty for the ESO are set out in Chapter 7 of the ESO Sector Annex.

7.2 There are five main types of UMs that we are using in the RIIO-2 price control:

- **Volume drivers** to adjust allowances in line with actual volumes where the volume of work required over the price control is uncertain (but where the cost of each unit is stable)
- **Re-opener mechanisms** to decide, within the price control period, whether changes in allowances are needed, e.g. to deliver a project or activity once there is more certainty on the needs case, and costs
- **Pass-through mechanisms** to adjust allowances for costs incurred by the network companies over which they have limited control, 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 sector specific cost pressures
- **Use-it-or-lose-it allowance** to adjust allowances where the need for work has been identified, but the specific nature of work or costs are uncertain.

7.3 We have decided to set a combination of common and bespoke UMs across our RIIO-2 Final Determinations. Common UMs apply to all sectors (cross sector), or to all companies within a sector (sector specific). In contrast, bespoke UMs are for individual companies to manage uncertainties that they face and are likely to be regional or company-specific in nature.

7.4 We provide further detail on UMs across the Final Determinations. Table 6 sets out where this can be found.

Table 6: Uncertainty mechanism and location

Type of UM	Decision location
Common UMs	Cross-sector UMs: Set out either in this Chapter or in relevant annexes.
	Sector-specific UMs: Set out in our GT, ET and GD Sector Annexes.

Type of UM	Decision location
Bespoke UMs	Set out in our Company Annexes. Not all network companies have bespoke UMs.

Default re-opener design parameters

Purpose: Re-openers allow network companies to receive additional allowances whenever there is more certainty about requirements. Where deemed necessary they also facilitate the adjustment of allowances by the Authority.

Benefits: Re-openers protect consumers and network companies by avoiding the need to set allowances when future costs are uncertain. Having a default re-opener design, which allows variation where appropriate, delivers a coherent regulatory framework and reduces complexity.

Final Determination

7.5 The decisions set out below are the default positions that will apply to the design of RIIO-2 re-openers. They do not necessarily apply to all re-openers. The specific design characteristics for each re-opener are set out in their individual sections.

Re-opener design parameters	Final Determination	Draft Determination
Date and duration of application window	The last week in January for one week. Except in the first year of RIIO-2 where the window will be the last week in April 2021 for one week.	Same as FD
Number and pattern of application windows	No default position. Normally we would not intend to adjust allowances in the first (2021-22) or the final (2025-26) years of RIIO-2.	Same as FD
Application requirements	Included in licence conditions and Re-opener Guidance and Application Requirements Document.	Same as FD
Authority triggered re-opener	Explicit provision for an Authority triggered re-opener within each re-opener mechanism will be determined on a case by case basis. This will be subject to the same scope and materiality thresholds that apply to the licensee.	Explicit provision for an Authority triggered re-opener included in each re-opener mechanism

Re-opener design parameters	Final Determination	Draft Determination
Materiality threshold	Adjustments to allowed revenue will only be made if the proposed adjustment as assessed by the Authority, when multiplied by the TIM rate, exceeds 0.5% of annual average ex ante base revenue.	A materiality threshold of 1% of annual average ex ante base revenue.
Aggregation	No provision for aggregation between applications made in relation to different re-openers.	Aggregation be permitted subject to criteria to be decided.
Re-opener Pipeline and tiered assessment system	We will work with stakeholders to develop a: <ul style="list-style-type: none"> • Re-opener Pipeline to monitor the flow of expected applications • A tiered assessment system for scrutinising individual applications 	N/A

Final Determination rationale and Draft Determination responses

Date and duration of application window

7.6 We have decided to implement our Draft Determinations position of a one-week application window for re-openers. A couple of respondents thought that the duration of the window should be longer. We think it remains adequate for application submissions given the timings of these windows are well known.

7.7 We have decided to implement our Draft Determinations position of an application window at the end of January of the relevant year, except in the first year of RIIO-2, where it will be the last week of April 2021. We received mixed stakeholder views on the timing of the application window. Two stakeholders supported our view, two others proposed that the application window should remain in May and another one proposed late February. We consider that having the window earlier in the calendar year makes it more likely that successful applications will be reflected in the subsequent Annual Iteration Process.

Number and pattern of application windows

7.8 We have decided to implement our Draft Determination position of no default with respect to either the number, or pattern, of application windows during RIIO-2. We think that, due to the variety of the uncertainties each re-opener mechanism

seeks to address, the decisions on this feature should be made on a case-by-case basis.

7.9 The majority of responses requested annual windows for each mechanism. One respondent stated that the Draft Determination proposals would lead to a concentration of applications in January 2022, imposing an unreasonable regulatory burden on network companies.

7.10 We recognise that most respondents considered that there should be more application windows and have responded by looking at this on a case-by-case basis. While there is no default position our preference is not to have windows every year. We have included provisions in some re-openers for the Authority to amend or add additional windows by direction, which removes the principle arguments in favour of more windows.

Application requirements

7.11 We have decided to retain our Draft Determination position and develop a Re-opener Guidance and Application Requirements Document that network companies will be required to comply with when submitting re-opener applications. We think that this will assist network companies in preparing applications and will help ensure that we have the information we require to make decisions - improving the quality of applications and helping to facilitate faster decisions by us.

7.12 Responses noted that Ofgem should publish proposed guidance, with one suggesting it would be beneficial to have a defined minimum information requirement or proposed template in the licence conditions. One commented that the guidance and requirements should be proportionate, and another believed that having requirements agreed upfront will allow companies to collect necessary data and reduce risk.

7.13 We welcome the broad support for the concept of guidance and agree that the guidance should be concise and that our requirements for re-opener applications should be proportionate.

7.14 Two companies stated that the guidance should be published before Final Determinations. Responses also agreed that the guidance should be consulted on before it comes into effect. A response stated that clear guidance should be available at least six months in advance of the re-opener application window, and that uniformity and consistency of approach will be important.

- 7.15 We published a draft document in October 2020 for informal consultation. We will publish a draft document for formal consultation alongside our statutory consultation on RIIO-2 licence conditions. It is our intention to have specific guidance in place for most re-openers. Where guidance is needed it will be published in sufficient time to inform applications.
- 7.16 One respondent disagreed with our proposal for the guidance to reject applications based on insufficient information, while another stated the guidance should be clear on the requirements to ensure rejections do not take place.
- 7.17 We think that it is reasonable to require that applications be submitted in accordance with published guidance and that applications that are not, should be rejected on that basis. This will provide a strong incentive to prepare applications that provide us with the information required to make timely decisions.

Authority triggered re-opener

- 7.18 We have decided that the decision as to whether there should be an explicit Authority triggered re-opener should be made on a case by case basis. Where the Authority trigger is maintained, this will be subject to the same scope and materiality thresholds as apply to applications made by a licensee. We think that including this provision for some re-openers is important; in particular, where the re-opener may be triggered by:
- changes that reduce a company's workload
 - a significant issue that requires additional flexibility to decide when to address.
- 7.19 Responses generally disagreed with the proposal for the Authority to be able to trigger any re-opener at any time. If used stakeholders thought that it should have the same time-limits and design parameters. One respondent thought an Authority trigger could undermine the principle of regulatory certainty.
- 7.20 We recognise these concerns and have addressed them above.

Materiality threshold

- 7.21 We have decided that the default position for RIIO-2 will be that adjustments to totex allowances will only be considered if the proposed adjustment, when multiplied by the TIM rate, exceeds 0.5% of annual average ex ante base

revenue. We have decided to make this change based on the feedback we have received to our Draft Determination proposals.

7.22 The majority of respondents thought the default materiality threshold at 1% was too high - with only one response in support. Stakeholders' arguments broadly suggested either no threshold or up to 0.5%, although there was no consensus. Some specific points included:

- that the choice of 1% seemed arbitrary and did not represent an equitable balance in the context of a 'low risk, low return' price control
- that the materiality threshold should be reduced to reflect the reduced length of RIIO-2: 5 years, as compared to RIIO-1 at 8 years.

7.23 We accept that a lower materiality threshold is appropriate but maintain that one is required as part of our default re-opener design. The TIM provides some protection for network companies from unforeseen costs and network companies should be expected to manage some degree of risk. We think 0.5% is an appropriate level to reflect the views expressed by respondents to our Draft Determinations position.

7.24 Several stakeholders suggested that how the materiality threshold is calculated could be made clearer, including by using an absolute value. To aid clarity we will consider whether to set out the thresholds associated with each re-opener in the licence and/or the Re-opener Guidance and Application Requirements Document, using the Final Determination figures for each company.

Aggregation

7.25 We have changed our position from Draft Determinations and decided to make no provision for aggregation between individual re-opener mechanism applications. While respondents supported the concept, they disagreed with the criteria we proposed in Draft Determinations for a re-opener application to be considered for aggregation. We think aggregation is no longer necessary. We have reduced the materiality threshold to 0.5%, the minimum level we identified in our Draft Determinations aggregation proposals.

Ensuring an agile, efficient, and proportionate process

7.26 We have decided that we will work with stakeholders following publication of Final Determinations to further develop a re-opener application pipeline log and a system of tiered assessment for scrutinising applications.

7.27 We will seek to complete the review process following receipt of an application within a period of 9 months or less, so that our decision on a particular re-opener can be reflected in the Annual Iteration Process immediately following the relevant application window. However, we recognise that for a variety of reasons this may not always be possible.

7.28 We will put in place a number of mechanisms to ensure the overall process remains as agile, efficient and proportionate as is reasonably practicable, including:

- the publication of clear Re-opener Guidance and Application Requirements
- establishing a re-opener pipeline log
- applying a system of tiered assessment
- a gateway style approach where appropriate.

7.29 The Guidance and Application Requirements document is discussed above.

7.30 A re-opener application pipeline log will be used to:

- monitor the flow of expected re-opener applications
- create a common understanding on which assessment tier is likely to be appropriate for each application
- encourage companies to align applications in response to triggers
- understand if the Authority will be required to direct additional re-opener windows
- make companies aware of our intention to trigger an Authority triggered re-opener.

7.31 Network companies will be required to provide up to date information in their annual RRP on potential applications they anticipate submitting during RIIO-2. The information required may include:

- the trigger for the application and the relevant re-opener mechanism
- likely date of application and the probability of submission
- potential value of adjustment to baseline allowances
- outline description of the application to be submitted, which should include:
 - the needs case
 - the nature of costs incurred and the evidence presented in support of these

- the options for the proposed work and the methodology used for their assessment.
 - Identification of issues (e.g. regulatory and commercial barriers) that may need to be resolved during the assessment process
 - an indication of the appropriate assessment tier for the application and reasons for this opinion.
- 7.32 We will work with stakeholders to develop a new tiered assessment system to introduce a proportionate approach to assessing re-opener applications. This will be part of the Re-opener Guidance and Application Requirements Document. Under this system the level of our regulatory scrutiny varies according to the quality of the application, the size of adjustment to allowances sought and the complexity of the issue being addressed. It will also allow us to focus resources on those areas that represent the biggest risk for consumers and is consistent with better regulation principles.
- 7.33 We have adopted a gateway style approach for those areas of uncertainty where it is deemed necessary.
- 7.34 GT compressor and major asset health projects will follow a four step Project Assessment Process (GT PAP). Details of this approach can be found in Chapter 3 of the Draft Determinations – NGGT Annex.³¹

Use-it-or-lose-it (UIOLI) allowances

Purpose: We set UIOLI allowances for certain non-transferable qualifying activities where the need for expenditure has been identified, but there is uncertainty about volumes and costs for those qualifying activities.

Benefits: UIOLI provides licensees with allowances and flexibility in delivering qualifying activities, whilst protecting consumers by ensuring that unspent allowances are returned to consumers.

Final Determination

- 7.35 Within our Draft Determinations we stated that we would use UIOLI allowances, as part of the suite of mechanisms, to ensure consumers pay for work undertaken. In

³¹ <https://www.ofgem.gov.uk/publications-and-updates/riio-2-draft-determinations-transmission-gas-distribution-and-electricity-system-operator>

bi-lateral engagement with licensees, there was a desire for greater clarity with regards to the treatment of UIOLI allowances.

7.36 We have decided that licensees can recover actual expenditure subject to that expenditure meeting the conditions set out in the relevant licence condition, which includes a requirement for that expenditure to be efficiently incurred. These conditions set out the qualifying actions that licensees can incur expenditure for each UIOLI allowance. The recovery of actual expenditure is subject to a cap as set out in the relevant licence condition.

7.37 We have categorised UIOLI allowances under the following two categories:

- UIOLI that are related to qualifying activities that are subject to fast money treatment and are provided for outside of baseline allowances
- UIOLI that are related to qualifying activities that are provided for within baseline allowances and are subject to our treatment of slow and fast money.

7.38 Under both categories, the TIM does not apply to under or overspends because those qualifying activities are non-transferable. Any underspend will be clawed back and licensees will bear the costs of any overspends.

7.39 Any clawback of allowances will assess total actual expenditure on qualifying activities (subject to the conditions in the licence) during RIIO-2 against total allowances for each individual UIOLI pot. This assessment will take place as part of the RIIO-2 close-out process.

Cross-sector uncertainty mechanisms

7.40 The complete set of Final Determinations for UMs and our rationale for accepting or rejecting them is set out in the Sector and Company Annexes.

7.41 Unless otherwise specified, the re-openers detailed in the rest of this Chapter will adopt the common design parameters set out in the previous section.

Table 7: RIIO-2 cross-sector uncertainty mechanisms

Mechanism Name	Mechanism Type	Chapter reference
UMs addressed in this document		
Real Price Effects	Indexation	Chapter 7 Core Document
Coordinated Adjustment Mechanism	Re-opener	Chapter 7 Core Document

Mechanism Name	Mechanism Type	Chapter reference
Cyber Resilience OT	Use-it-or-lose-it allowance, with PCDs and re-opener	Chapter 7 Core Document Confidential annexes
Cyber Resilience IT	Re-opener with PCDs ³²	Chapter 7 Core Document Confidential annexes
Non-operational IT and Telecoms Capex	Re-opener	Chapter 7 Core Document
Physical Security (PSUP)	Re-opener with PCDs	Chapter 7 Core Document
Net Zero and Re-opener development UIOLI	Use-it-or-lose-it allowance	Chapter 8 Core Document
Net Zero Pre-construction and Small Projects Re-opener	Reopener	Chapter 8 Core Document
Net Zero	Re-opener	Chapter 8 Core Document
UMs addressed elsewhere		
Cost of debt indexation	Indexation	Chapter 1 & 2 Finance Annex
Cost of equity indexation	Indexation	Chapter 1 & 3 Finance Annex
Inflation indexation of RAV and Allowed Return	Indexation	Chapter 9 Finance Annex
Pensions (pension scheme established deficits)	Re-opener	Chapter 11 Finance Annex
Tax review	Re-opener	Chapter 7 Finance Annex
Bad debt	Pass-through	Chapter 11 Finance Annex
Business rates	Pass-through	SSMD, Core Document, paragraph 9.11
Ofgem Licence Fee	Pass-through	SSMD, Core Document, paragraph 9.11

Real Price Effects (RPE)

Purpose: We use RPEs to adjust company allowance to reflect changes in input prices experienced by companies over the price control period.

Benefits: The use of RPEs reduce risk by reflecting material external cost fluctuations in companies' revenue.

Final Determination

UM parameter	Final Determination	Draft Determination
Real Price Effects (RPEs)	Include adjustments for RPEs for all network companies based on forecasts of input price indices in upfront allowances. "True up" RPE adjustments annually based on out-turn differences between actual CPIH and input price indices.	Same as FD

³² PCD element of the cyber resilience IT does not apply to the ESO.

UM parameter	Final Determination	Draft Determination
Applied to	Cross-sector UM - All ET, GT, and GD companies	Same as FD
Licence condition	No. Please see PCFH for detail regarding the AIP update process.	No

Final Determination rationale and Draft Determination responses

Table 8: RPE input price indices and weightings

Index	Weightings					
	GD	NGGT	NGGT	NGET	SHET	SPT
Labour Costs (general and specialist)	100%	100%	100%	100%	100%	100%
AWE: private sector (K54V)	33.3%	33.3%	33.3%	25%	25%	25%
AWE: Construction (K553)	33.3%	33.3%	33.3%	25%	25%	25%
BCIS PAFI civil engineering (4/CE/01)	33.3%	33.3%	33.3%	25%	25%	25%
BEAMA: electrical engineering	NA	NA	NA	25%	25%	25%
Materials	100%	100%	100%	100%	100%	100%
BCIS 4/CE/24 Plastic Products (including pipes)	33.3%	NA%	NA%	NA	NA	NA
BCIS 3/S3 Structural steelwork – Materials: Civil Engineering Work	33.3%	50%	50%	NA	NA	NA
BCIS 4/CE/EL/02 Electrical engineering materials	NA	NA	NA	50%	50%	50%
BCIS FOCOS Resource Cost Index of Infrastructure: Materials (7467)	33.3%	50%	50%	50%	50%	50%
Plant & equipment	NA	NA	NA	NA	100%	NA
PAFI plant and road vehicles (1702)	NA	NA	NA	NA	50%	NA
ONS Machinery & equipment output PPI (K389)	NA	NA	NA	NA	50%	NA

- 7.42 In the SSMD we confirmed our intention to make use of indexation to account for RPEs. This would replace the fixed ex-ante allowances set during RIIO-1.
- 7.43 Although two stakeholders disagreed with our approach, the majority of respondents welcomed the use of indexation in RIIO-2.
- 7.44 We have decided to maintain our position and include adjustments for RPEs for all network companies.
- 7.45 This is based on forecasts of input price indices in upfront allowances and "true up" RPE adjustments annually based on out-turn differences between CPIH and

- input price indices. This will be undertaken as part of our Annual Iteration Process (AIP).
- 7.46 We will index RPEs where evidence suggests that input price risks are materially different from inflation (CPIH) risk and set RPEs at zero where differences are not material.
- 7.47 We have decided to maintain our position and use a notional cost structure for all GDNs and a company-specific structure for each of TOs. Our position was supported by several respondents.
- 7.48 Some of the GDNs argued though that the use of notional cost structure in the assessment may not fully reflect actual costs due to regional differences in labour costs and different approach to cost allocation.
- 7.49 A few respondents expressed concerns over the weightings attached to different cost categories, stressing that these should reflect the nature of the cost base.
- 7.50 In using a notional cost structure for GD, it is our intention to avoid an overly complex approach. We recognise that companies operate different business models and that a notional structure might be perceived as beneficial to certain companies. However, by using a notional cost structure, we also avoid rewarding potentially inefficient cost structures. The cost structure information reflects the share of each expenditure category in the indicative Totex allowances rather as submitted in the BPs. However, the weighting of each cost category within each expenditure category is still taken from the BPs.
- 7.51 We only apply RPEs where we think the impact is likely to be material. We maintain our approach to assessing the materiality of RPEs by setting a materiality threshold for different cost categories of 10% of Totex.
- 7.52 We would also apply RPEs if the costs category makes up at least 5% if the expected impact of real price movements in the category represents at least 0.5% of Totex. For the GDNs, the materiality assessment is based on the notional cost structure.
- 7.53 Some respondents disagreed with the method for determining materiality, indicating that a 10% threshold is too high or not in line with the materiality thresholds that apply elsewhere in RIIO-2. Equally, some stakeholders were supportive of our approach.

7.54 We acknowledge concerns raised by the stakeholders with regards to the materiality threshold. However, there is a balance to be struck between transferring external risks onto customers and the complexity of the indexation. In the case of costs which are not covered by RPEs, we believe that the annual variations can be managed by the companies.

7.55 Consequently, we have decided to apply RPE adjustments to the following cost categories:

- labour (general and specialist) for all companies in GD and T
- materials for all companies in GD and T
- plant and equipment for SHET only (other company cost submissions did not pass the materiality test for this cost category).

7.56 In light of stakeholder responses suggesting alternative indices, we reviewed the indices proposed at the Draft Determinations and their weightings.

7.57 We acknowledge the concerns over the selection of RPE indices and decided to:

- remove the AWE: transport and storage (labour and BCIS 3/58 copper pipes and accessories used in the Draft Determination, on the basis that they do not reflect a material portion of costs for network companies
- for ET only, replacing the BCIS 3/58 copper pipes and accessories (materials) index with BCIS 4/CE/EL/02 electrical engineering materials. This decision was based on responses and assessment that identify this index as a more accurate measure of ET materials costs
- remove the ONS Machinery & equipment input PPI. We think that network company machinery and equipment costs are more likely to reflect output producer prices, not input producer prices

7.58 Table 9 below sets out RIIO-2 RPE forecasts following an application of the indices and weightings set out in Table 8 above, to our cost structures.

Table 9: RIIO-2 RPE forecasts

Network	2020/21	2021/22	2022/23	2023/24	2024/25 – 2025/26
GDNs	0.9%	1.4%	1.1%	1%	0.9%
NGGT (TO)	1.0%	1.5%	1.2%	1.1%	1.0%
NGGT (SO)	0.9%	1.3%	1.0%	0.9%	0.9%
NGET	0.7%	1.1%	0.9%	0.8%	0.7%

Network	2020/21	2021/22	2022/23	2023/24	2024/25 – 2025/26
SHET	0.6%	1.0%	0.8%	0.7%	0.7%
SPT	0.5%	0.9%	0.7%	0.6%	0.6%

Coordinated Adjustment Mechanism (CAM)

Purpose: To reallocate activity and associated responsibility and allowances from one licensee’s price control to another.

Benefit: To protect consumer interests by enabling the reallocation of responsibility for, and revenue associated with, an output/project from one licensee to another licensee who can deliver that output/project with greater overall value for the consumer.

Final Determination

UM parameter	Final Determination	Draft Determination
Re-opener window	Annual re-opener windows.	Annual re-opener windows or two sets of re-opener windows.
Timing of windows	May	January or May
Re-opener materiality threshold	None (submissions will be assessed on the scale of increased benefits for consumers, not the project costs)	Same as FD
Single or joint application	Application to come from single licensee, but must contain a statement of agreement between the licensee who was originally assigned the responsibility and associated revenues for the output or project and the licensee who is able to deliver it with greater overall value to consumers.	Same as FD
Authority triggered re-opener?	No. The network companies only can trigger the CAM on a voluntary basis.	Same as FD
‘Foreseeable’	There is no additional requirement that the proposed reallocation was ‘foreseeable’ at the time of BP submission	Same as FD
Incentive	No financial incentive for networks to utilise this re-opener. Networks may agree commercial compensation for potential losses between themselves where necessary.	Same as FD
Reporting / submission requirements	Main requirement to demonstrate greater benefits for the consumer than the status quo. Further information on the evidence licensees must provide in the CAM re-opener Application Guidance.	Same as FD

UM parameter	Final Determination	Draft Determination
Applied to	All network companies, except the ESO, on a within sector and cross sector basis, i.e. any combination of licensees from any sector may submit an application.	Same as FD
Licence condition	Special Condition 3.8	N/A

Final Determination rationale and Draft Determination responses

- 7.59 We received 23 responses to our proposal in our Draft Determinations, all of which agreed with the introduction of the CAM re-opener, although views differed on how some aspects should be implemented.
- 7.60 We have decided to set the re-opener window annually in May as it helps to remove a potential resource burden from network companies, who may submit multiple re-opener applications in January for other mechanisms.
- 7.61 A change to the timings was supported by the majority of respondents who commented on it, albeit some favoured having no window to avoid delay in potential benefits, while another stakeholder suggested one window only during the price control was sufficient. We don't have evidence to suggest that any material benefits would be lost from having an annual window and think this provides flexibility to move activities between licensees regularly within the five-year period.
- 7.62 Thirteen respondents agreed that there should be no materiality threshold for this re-opener. As the project costs for the initial project activity were set at the beginning of the price control, the value attached to any application under this re-opener will be judged on the level of additional benefits to be gained by the consumer from adopting the alternative activity. We do not consider it necessary to put an artificial limit on the scale of the additional value, as networks are unlikely to put forward applications where the cost of doing so outweighs any additional benefits. We have therefore decided that there should be no materiality threshold for this re-opener.
- 7.63 Ten respondents commented on how the application should be made, with 9 in favour of a single lead applicant as long as the application contains a statement of agreement from their partner licensee(s). We agree with the respondents that it will be more efficient to have a single licensee act as coordinator for the

application. One respondent preferred a joint application process, but no argument was put forward in favour of this.

- 7.64 Four respondents commented and agreed on the proposal for the re-opener to be triggered by networks only. We agree that networks are best placed to identify and propose changes in activity across price controls, as identified through their ongoing business planning, data sharing, and coordination processes.
- 7.65 Fourteen respondents supported our Draft Determinations proposal to remove the 'foreseeable' requirement from the CAM re-opener applications. We have decided that a foreseeable requirement is not required. We agree that the level of planning and scrutiny involved in agreeing BPs at the start of the price control is sufficient to ensure that a sub-optimal solution could not have been deliberately chosen with a view to reallocating it to another network for a profit at a later point.
- 7.66 Fourteen respondents also commented on our proposal not to offer a financial incentive for using this re-opener, with 8 agreeing that an incentive was not needed, and 6 stating that it would be. We acknowledge that a company may need to weigh potential future returns from increasing the value of their RAV, or predicted payments for overperformance, and so some inducement may be needed to mitigate the risk
- 7.67 However, we do not believe that risk should be borne by an additional consumer-funded incentive to utilise the re-opener. Instead, we expect that the network companies should agree among themselves a level of commercial payment sufficient to hedge against the risk of losing potential overperformance payments.
- 7.68 We note comments from respondents querying whether the licence condition should refer to greater 'cost-effectiveness' for consumers as a rationale for the application, or to greater 'overall consumer value'. We agree that overall value to consumers should be the criteria, as it is likely to be greater than the savings made by a straightforward cost comparison between the two alternative activities. We have amended our position from Draft Determination and the licence condition accordingly.
- 7.69 Guidance on the detail and evidence required for re-opener applications will be included in the CAM Re-opener Application Guidance.

- 7.70 We also asked for views on whether ET, GT, and GD networks would utilise the re-opener with electricity distribution networks, if the re-opener were to be introduced into the ED RIIO-1 price controls to coincide with the start of the ET/GT/GD RIIO-2 price controls.
- 7.71 Nineteen respondents commented on this proposal, with 15 in favour, and 4 against (mainly because it was considered that the question should be reserved for the electricity distribution RIIO-2 consultation). We are also considering responses to the RIIO-ED2 Methodology Consultation published on 30 July 2020 and will provide further information in our upcoming RIIO-ED2 SSMD publication.³³
- 7.72 This re-opener will be available to GD, ET, GT, but not the ESO, as we consider that this re-opener will be mainly utilised for potential asset or infrastructure solutions on a network for which the ESO does not have the initial base allowances in their price control.

Cyber Resilience Operational Technology (OT) and Cyber Resilience Information Technology (IT)

Purpose: To enable companies to manage risks associated with the security of their operational technology (OT) and information technology (IT) network and information systems. This allowance supports companies to respond to identified risks by taking appropriate and proportionate measures to enhance the cyber resilience of their OT and IT network and information systems.

Benefits: Ensure network companies are managing risks posed to the security of the network and information systems and preventing and minimising the impact of incidents on these essential services to ensure a safe and resilient network.

Final Determination

Cyber resilience OT

Our decision for cyber resilience OT is to set UIOLI allowances with PCDs and a re-opener. All cyber resilience OT allowances are excluded from the TIM.

³³ <https://www.ofgem.gov.uk/publications-and-updates/riio-ed2-sector-specific-methodology-consultation>

Cyber resilience OT UIOLI, PCD, and UM

Output/UM parameter	Final Determination	Draft Determination
Output type	Use-it-or-lose-it with PCD.	Same as FD
Output	Specified PCDs to enhance cyber resilience in relation to OT, including measured risk reduction or improved CAF Outcomes on the licensee's network and information systems.	Same as FD
Delivery date	Specified in confidential company annexes.	Same as FD
Totex baseline allowances	Specified in confidential company annexes.	Same as FD
Reporting method	Ongoing biannual (six monthly) reporting.	Licence obligations and reporting requirements
Adjustment mechanism	Ex post assessment of PCDs. Allowances are also subject to a use-it-or-lose-it adjustment.	Same as FD
Licence obligation	Yes – to take all reasonable steps to deliver outputs.	N/A
UM type	Re-opener.	Same as FD
Re-opener window	Companies must submit a cyber resilience OT plan during the first re-opener of the RIIIO-T2 price control (2021). Companies may submit a cyber resilience OT application during the second re-opener window (2023).	Same as FD
Re-opener materiality threshold	No materiality threshold.	Same as FD
Authority triggered re-opener?	Yes.	Same as FD
Applied to	Cross-sector UIOLI, PCD and UM - All ET, GT, and GD companies.	Same as FD
Licence condition	Special Condition 3.2.	Same as FD

Cyber resilience IT

7.73 Our decision for cyber resilience IT is to set allowances subject to PCDs and re-openers.

Cyber resilience IT PCD and UM

Output/UM parameter	Final Determination	Draft Determination
Output type	PCD	Same as FD
Output	Specified PCDs to enhance cyber resilience in relation to IT, including measured risk reduction or improved CAF Outcomes on the licensee's network and information systems.	Same as FD
Delivery date	Specified in confidential company annexes	Same as FD
Totex baseline allowances	Specified in confidential company annexes	Same as FD
Reporting method	Ongoing biannual (six monthly) reporting	License obligations and reporting requirements
Adjustment mechanism	Ex post assessment of PCDs	Same as FD
Licence obligation	Yes - to take all reasonable steps to deliver outputs	Same as FD
UM type	Re-opener	Same as FD
Re-opener window	Companies must submit a cyber resilience IT plan during the first re-opener of the RIIO-T2 price control (2021). Companies may submit a cyber resilience IT application during the second re-opener window (2023).	Same as FD
Re-opener materiality threshold	No materiality threshold	Same as FD
Authority triggered re-opener?	Yes	Same as FD
Applied to	Cross-sector PCD - All ET, GT, and GD companies Cross-sector UM - All ET, ESO, ³⁴ GT, and GD companies	Same as FD
Licence condition	Special Condition 3.3	Same as FD

Final Determination rationale and Draft Determination responses

7.74 We received 19 responses to our Draft Determination, the main topics were:

- our proposed re-opener windows for cyber resilience OT and IT

³⁴ Only the first re-opener window is applicable for the ESO as the ESO may submit additional cyber costs as part of its second Business Plan in 2023

- our proposal to require all licensees to provide updated plans at the beginning of RIIO-2
- our proposal on cyber OT and IT re-opener assessments
- our proposal on including the delivery of outputs such as CAF outcome improvement in addition to project-specific outputs.

7.75 Our decisions for each company's cyber resilience OT and IT allowances are confidential and not discussed in this document in the interests of national security. Our decisions for each company are detailed in confidential annexes. We have shared cyber resilience confidential annexes with each company.

Cyber assessment methodology

7.76 We have decided to implement our Cyber Resilience Operational and Information Technology Plan Assessment Methodologies Annex for our Final Determinations on both cyber resilience OT and IT.³⁵ We did not receive any response to our approach and we have addressed specific comments on the outcome of our assessment in each companies' specific annex. Given we have adopted our methodology in full, we have decided not to re-publish this alongside Final Determinations.

Re-openers for cyber resilience OT and IT

7.77 We have decided to implement our Draft Determinations position on re-opener windows for cyber resilience OT and IT. Our Final Determination decision is to have a re-opener mechanism with two re-opener windows, one at the beginning of RIIO-2 when the licensees submit their OT and IT plans (1 April 2021 and 8 April 2021) and a second at the mid-period of RIIO-2 (25 January 2023 and 31 January 2023). We have also decided to have an Authority triggered re-opener.

Frequency of re-opener windows

7.78 We have decided to implement our Draft Determination proposal to have two re-opener windows. We had a number of responses suggesting a range of approaches, including just a single window, annual re-opener windows or agreeing with our proposed approach of two windows. Our view is that two windows is appropriate given there is an immediate need for a re-opener window at the start

³⁵ <https://www.ofgem.gov.uk/ofgem-publications/164684>

of RIIO-2 to allow companies to develop robust plans and a mid-period re-opener provides flexibility for companies.

- 7.79 Additionally, we have decided given the importance of cyber resilience to national security to have an Authority Triggered re-opener to provide further flexibility for Ofgem and companies should there be a need.

Requirement to submit cyber resilience OT and IT plans

- 7.80 We have decided to implement our Draft Determinations proposal to require all network companies to submit cyber resilience OT and IT plans at the start of RIIO-2 during what we refer to as the first re-opener window.
- 7.81 Three network companies questioned, in response to our Draft Determinations proposal, whether mandatory submission of cyber resilience OT and IT plans was necessary.
- 7.82 Having assessed companies' BPs and considered consultation responses along with ongoing bilateral engagement, our view is that it is appropriate to require network companies to submit cyber resilience OT and IT plans during the first re-opener window at the start of RIIO-2. This is to ensure that we can assess proposals for investments from the companies and to set appropriate outputs. We note that as we referred to in our Draft Determinations, OT and IT are fast-changing environments and cyber resilience OT, in particular, is a relatively new policy area.

Materiality threshold

- 7.83 We are adopting our Draft Determinations position to have no materiality threshold for both re-openers. Our Draft Determinations proposal was widely accepted in companies' consultation responses.

Reporting requirements for re-openers

- 7.84 We have decided to implement our Draft Determinations position to require reporting in relation to cyber resilience OT and IT. We have decided to require the submission of reports every six months. Having engaged with network companies, including in the context of the licence drafting process, we consider that this strikes an appropriate balance between demonstrating progress on cyber investments and the need to avoid overly burdensome reporting.

Re-opener assessment timescales and methodology

- 7.85 The ESO and two TOs stated that a clear deadline should be applied to Ofgem's consideration of re-opener applications. We have considered Ofgem's re-opener assessment timescales as a common policy across all RIIO-2 re-openers and consider that cyber resilience re-openers should not diverge from RIIO-2 general re-opener decisions. We have decided to implement our Draft Determinations position of no Ofgem assessment deadline, which is consistent with general RIIO-2 re-opener decisions.
- 7.86 A TO also requested clarification on the process, timelines, and granularity of Ofgem's assessment process. Ofgem will publish RIIO-2 Re-opener Guidance and Application Requirements Document (including an Appendix on Cyber Resilience IT and OT Re-Opener Application Guidance), which will provide this further detail. We consulted on a draft of this document including the Cyber Resilience IT and OT Appendices between 12 October 2020 to 9 November 2020.³⁶

Inclusion of outputs such as CAF outcome improvement in addition to project-specific outputs

- 7.87 In our Draft Determinations we proposed specifying the delivery of outputs such as CAF outcome improvement, risk reduction and cyber maturity improvement, in addition to project-specific outputs.
- 7.88 Most consultation responses on this point supported the principle of specifying these types of outputs. However, a GDN said that the inclusion of outputs such as CAF outcome improvement would represent a substantial regulatory intervention by Ofgem and could result in increases in companies' administrative costs. Two other stakeholders said that this approach would represent micro-management by Ofgem.
- 7.89 Having considered consultation responses and ongoing bilateral engagement we have decided to implement our Draft Determination proposal to specify the delivery of outputs such as CAF outcome improvement, risk reduction and cyber maturity improvement, including by specifying outcomes as part of PCD outputs to ensure through our ex-post assessment that we fund only work which delivers the desired benefits.

³⁶ <https://www.ofgem.gov.uk/publications-and-updates/riio-2-informal-re-opener-application-guidance-consultation-transmission-gas-distribution-and-electricity-system-operator-licences>

7.90 Given the importance of cyber resilience to national security, the outputs of these PCDs will be licence obligations.

Use-it-or-lose-it and PCD for cyber OT

7.91 Our decision is to implement our Draft Determinations position of providing funding subject to UIOLI and PCD ex-post assessment for cyber resilience OT.

7.92 We will determine any adjustments to allowances as part of our PCD outputs assessment. After concluding our PCD outputs assessment we will then determine any UIOLI adjustment required. The UIOLI adjustment will be determined by assessing companies' total efficient spend for qualifying cyber OT activities against the total use-it-or-lose-it allowance for cyber OT.

Non-operational IT and Telecoms capex re-opener

Purpose: To provide allowed expenditure to network companies as part of their Totex to implement efficient IT enhancements in support of the business systems and networks.

Benefit: Ensure network companies are able to achieve their IT strategy and meet the aspiration of digitalising the energy sector.

Final Determination

UM parameter	Final Determination	Draft Determination
UM type	Re-opener	Same as FD
Re-opener window	Between 1 April 2021 and 8 April 2021; and Between 25 January 2023 and 31 January 2023	Same as FD
Re-opener materiality threshold	No materiality threshold	Same as FD
Authority triggered re-opener?	Yes	Same as FD
Additional requirements	Further detail on the application process and content can be found in the IT&T Non-operational capex re-opener guidance	Same as FD
Applied to	Cross-sector UM - All ET, GT, and GD companies	Same as FD
Licence condition	Special Condition 3.7	Same as FD

Final Determination rationale and Draft Determination responses

- 7.93 We received 16 responses to our Draft Determinations. The response from the GDNs and Transmission companies were broadly supportive of the non-operational IT & Telecoms re-opener and its proposed structure.
- 7.94 We have decided to implement our Draft Determinations position to introduce a re-opener for non-operational IT and Telecoms. The network companies raised general concerns regarding the level of proposed IT investment subject to a UM at Draft Determinations. Network companies submitted additional evidence relating to RIIIO-2 IT investment in response to Draft Determinations. We have engaged with the companies further and as a result of the evidence submitted, we have decided to increase ex-ante allowance relating to IT investments. Further information on the increased ex-ante allowance for IT investments has been included in the Company Annexes. Remaining IT projects that were not afforded an ex-ante allowance will remain subject to this re-opener. The scope of the re-opener mechanism remained unchanged and is still deemed appropriate despite the reduction in the number of IT projects for which the UM is applicable.
- 7.95 Given the general support of the mechanism and the reduction in the level of investment subject to a UM we have decided to implement our Draft Determinations position for the non-operational IT and Telecoms re-opener to ensure that Network companies can access funding for IT projects which are currently deemed too immature for ex-ante allowances.
- 7.96 Additionally, we have decided to have an Authority Triggered re-opener to provide flexibility for Ofgem to respond to any changes to statutory or regulatory requirements relating to Non-operational IT Capex should there be a need.

Physical security (PSUP) re-opener

Purpose: To adjust revenues following government mandated changes to network site security requirements.

Benefit: this re-opener ensures network companies are compliant with government security requirements.

Final Determination

UM parameter	Final Determination	Draft Determination
UM type	Re-opener	Same as FD
Re-opener window	Year 3, RIIO-2 close-out	2023, 2026
Re-opener materiality threshold	No materiality threshold	1% of ex ante base revenue
Authority triggered re-opener?	Yes	No
Additional requirements	Scope of UM limited to PSUP-related investments due to changes to government policy and/or the CNI list	Same as FD
Applied to	All ET, GT and GD networks	Same as FD
Licence condition	Special Condition 3.4	NA

Final Determination rationale and Draft Determination responses

- 7.97 We received thirteen responses concerning the physical security re-opener, largely concerning the proposed materiality threshold and re-opener windows. All networks, User Groups, industry bodies and consumer groups that responded supported our position to retain a re-opener for physical security costs. A CEG disagreed suggesting a pass-through mechanism may be preferable to a re-opener.
- 7.98 We implement our Draft Determinations position to include a re-opener for Physical Security Upgrade Programme (PSUP) related costs that companies may incur due to changes to government policy and/or the Critical National Infrastructure (CNI)³⁷ list. We do not agree that pass-through is appropriate because network companies do have some control over these costs and should be incentivised to reduce these through the TIM.
- 7.99 In light of consultation responses, we have decided not to apply a materiality threshold to this re-opener. We acknowledge that these costs are externally driven and companies should be funded to complete the physical security upgrades expediently.

³⁷ [Critical National Infrastructure](#)

7.100 We are setting re-opener windows in Year 3 and at the end of the price control at RIIO-2 close-out, which is a slight change from our Draft Determinations position of windows in 2023 and 2026. We acknowledge the networks' responses that flexibility is required due to uncertainty around when any changes to government policy may occur. We consider that re-openers at the middle and end of the price control period, as well as provision for an Authority-triggered re-opener, provide sufficient flexibility to ensure network companies are funded to make the necessary PSUP investments within the timescales specified by BEIS.

7.101 We have included the option for an Authority-triggered re-opener for this UM, which is a change to our Draft Determination. We consider this appropriate as the delivery date for PSUP projects is determined by BEIS and we want to ensure that network companies are appropriately funded should these costs arise outside of the two re-opener windows.

Addressing changes to legislation, policy and technical standards

Purpose: To ensure that appropriate provisions are made where needed to take account of changes to technical standards, regulatory amendments, and legislative requirements that have not been taken into account when setting baseline allowances and outputs.

Final Determination

7.102 Where we have been convinced of the need for additional baseline allowances or specific UMs to deal with such uncertainties, we have included them within our Final Determinations. Further details and our reasons are set out elsewhere in this document, and in the respective sector and company annexes.

7.103 We have decided against including specific cross-sectoral re-openers to deal with uncertainties relating to Brexit, changes to engineering and technical standards and climate resilience.

Final Determination rationale and Draft Determination responses

7.104 In our Draft Determinations, we set out our position to not introduce additional re-openers to take account of uncertainties relating to changes in legislation, policy and technical standards. This was based on a lack of information to justify the inclusion of specific re-openers in these areas. We also noted the inclusion of

several re-openers within the proposed RIIO-2 package that could make additional mechanisms unnecessary.

7.105 We received many responses from stakeholders on this issue, with most expressing a preference for the inclusion of additional re-openers. These covered a range of sources of uncertainty, some of which were specific to one company or sector, and others that apply more widely to all sectors.

7.106 In many cases, we believe that we have addressed the impact of uncertainty within our Final Determinations by including one or more of the following measures where we have good evidence to support them:

- Additional baseline Totex allowances (i.e. Environmental Enhancement)
- Targeted UIOLI funding
- Baseline Totex allowances with a true-up mechanism at the end of the RIIO-2 period (i.e. Wayleave review / Landowner compensation)
- Introduction of a new re-opener (i.e. Access Reform, Net Zero re-opener).

7.107 These measures that we have included are described in the relevant sections of this document, the Sector Annexes, and the Company Annexes. In this section, we present the reasons for areas where we have decided not to include a specific UM or a re-opener for Final Determinations.

7.108 In some cases, we have decided against including a specific UM or a re-opener because we remain of the view that these are not justified. Our reasons for doing so are set out below.

Brexit

7.109 We received six consultation responses requesting the inclusion of a re-opener to take account of the UK's departure from the EU, on the grounds that this could impose additional and unexpected costs on companies during the RIIO-2 period.

7.110 Respondents said that the future trading arrangements between the UK and the EU are currently unknown, and there could be changes to import tariffs and VAT rates that could lead to materially higher input prices for licensees. We acknowledge that there is some risk to input prices from uncertainty about the UK's future relationship with the EU; however, the information we have seen does not show that existing mechanisms within RIIO-2 are not capable of adequately

dealing with these risks through the inclusion of RPE indexation and risk/contingency allowances where applicable.

Engineering technical standards

7.111 We received four responses requesting a new re-opener or provision of additional baseline funding to deal with legislative changes in Engineering technical standards during RIIO-2 that may lead to higher costs, such as Electricity Safety, Quality and Continuity Regulations (ESQCR), System Operator Transmission Owner Code (STC) and future Significant Code Reviews (SCRs).

7.112 We have decided to include baseline allowances where licensees have been able to justify the associated costs. However, we have decided not to implement specific re-openers for RIIO-2. We disagree with TOs' response that amendments to legislation may have a significant impact on existing or future infrastructure and have a substantial financial risk, as we do not consider that there is sufficient evidence that indicates that such changes will have adverse impacts for TOs. If there are small changes on technical standards during RIIO-2, there are existing mechanisms to mitigate the incurred costs.

Climate resilience

7.113 On climate resilience, we received two responses to our Draft Determinations, focusing on TOs' efforts to deliver asset resilience and the risk of physical impacts to their networks (ie multi-hazards, wildfires and extreme weather).

7.114 Our final decision is to not include a re-opener or additional baseline funding for companies, as we are not convinced that the impact is material from this change on the TOs network.

7.115 Our general approach on climate resilience is set out in Chapter 4 of this document.

Review of GB System Operation

7.116 Our RIIO-2 decisions are based on the current governance framework for the gas and electricity system operators. In February 2020, we announced an accelerated and expanded review of GB system operation. This review will provide the

Governments with advice on whether we have the right governance framework in place to deliver the Net Zero emissions target at lowest cost to consumers.

7.117 If this review (or any subsequent review) results in the Governments deciding to make changes to the current model for system operation, then we may need to reconsider the suitability and effectiveness of the RIIO-2 price control arrangements for the affected companies which could lead to key parameters of the settlement being adapted.

8. Net Zero and innovation

8.1 In this Chapter we set out our approach to support network companies in the transition to Net Zero.

Approach to supporting Net Zero

8.2 A key objective of RIIO-2 is to prepare network companies to deliver Net Zero at lowest cost to the consumer, while maintaining world-class levels of system reliability. Investment in the energy networks is likely to need to increase to meet Net Zero targets as we progress through this decade.

8.3 To achieve this key objective, we have built adaptable and flexible network price controls which can facilitate the transition to a Net Zero future. We have also challenged network companies to be as efficient as possible in how they run and finance themselves. This will help to offset the impact of any Net Zero investment on consumer bills.

8.4 We have similarly challenged the ESO to be highly ambitious and work closely with stakeholders to ensure there is a coordinated, whole system approach to solving Net Zero challenges.

8.5 In February, we published Ofgem's Decarbonisation Action Plan setting out our intentions to make "the network price control regulatory regime more adaptive to deliver the most effective transition at lowest cost".³⁸

8.6 To achieve this, the RIIO-2 price control is flexible enough to inject the necessary funding, at the right time, to support the achievement of Net Zero. We have allowed for significant additional funding to be made available within the price control period (for GD, GT and ET), rather than having everything settled at the beginning of the control. The ESO's price control is designed to provide it with the flexible funding required, which means specific Net Zero uncertainty mechanisms are not required. This is set out in more detail in the ESO Sector Annex.

8.7 At Draft Determinations, we proposed a broad range of mechanisms designed to work as a coherent package of measures to ensure that companies have sufficient flexibility to bring forward both strategic network investments for Net Zero and

³⁸ [Decarbonisation Action Plan](#) , Ofgem, February 2020.

respond to changes in network requirements. We have listened carefully to stakeholders' feedback and have developed these for FD – these are summarised in Table 10.

- 8.8 To make ongoing funding decisions on major strategic investments in the most joined up way, we want to improve our co-ordination with the Government and devolved administrations and other key stakeholders, such as the National Infrastructure Commission, the Committee on Climate Change, and the devolved administrations. To do this, we have established a Net Zero Advisory Group (NZAG) and our own sub-committee of the cross-Government Net Zero Innovation Board (NZIB), bringing these key stakeholders together. Discussions with the NZAG and NZIB will be taken into account in deciding our approach to and timing of big strategic investments.

Table 10: RIIO-2 mechanisms related to Net Zero

Mechanism	Scope	Sectors applied to	Draft Determination
Cross-sector			
Net Zero and Re-opener development UIOLI	To enable Net Zero related development work and small value Net Zero facilitation projects to go ahead.	GD, GT, ET	New mechanism
Net Zero Re-opener	To allow changes in policy, the role of the network companies, as well as technological or market to be reflected in company allowances.	GD, GT, ET	Same as FD
Network Innovation Allowance	To enable smaller-scale innovation projects that relate to the energy system transition (and/or consumers in vulnerable situations). This mechanism is available to the ESO.	All	Same as FD
Strategic Innovation Fund	To enable a strategic approach to innovation funding that supports the achievement of Net Zero targets. This mechanism is available to the ESO.	All	Same as FD
Sector Specific			
Net Zero Pre-construction and Small	To capture pre-construction projects and small value Net Zero	GD, GT	New mechanism

Mechanism	Scope	Sectors applied to	Draft Determination
Projects Re-opener	facilitation projects that are too big for the UIOLIA but too small to be captured by the larger Net Zero related re-openers as it does not meet feasibility requirements.		
Pre-construction Funding PCDs	These allow for the development of the large strategic reinforcements required to accommodate Net Zero.	ET	Same as FD
Heat Policy re-opener	To respond to policy decisions on the future of gas and heat.	GD	Same as FD
New Large Load Connection(s) Re-opener	To increase baseline allowances to fund specific network reinforcement driven by the connection of large loads and gas producers.	GD	Same as FD
Demand and generation connection volume drivers	An automatic mechanism to flex ET allowances.	ET	Same as FD
Medium-sized Investment Projects (MSIP)	For various types of ET projects worth up to £100m.	ET	Same as FD
Large Onshore Transmission Investment	For strategic investments greater than £100m.	ET	Same as FD
Major projects Re-opener	To assess funding for projects to reduce compressor emissions.	GT	Same as FD
Incremental capacity Re-opener	To assess requests for capacity in GT.	GT	Same as FD

8.9 We have decided to provide Net Zero related allowances in baseline Totex, including:

- In the ET sector, we are providing £496m of Totex allowances for load related investments, most of which will go directly towards connecting new low carbon generation. Additionally, in ET we are allowing over £500m of pre-

construction funding to enable the development of strategic investments that will be critical to enabling Net Zero

- Across the sectors we are approving £209m of NIA allowances that will support the energy system transition
- We have also established a cross-sector UIOLI allowance worth £88m for both the early design work on Net Zero related projects and the construction of low materiality hydrogen and green gas projects
- In the GD, we have specifically funded £12m of development work on a first-of-a-kind hydrogen project that Cadent is developing in one of the Industrial Clusters
- The EAPs that we have approved and environmental incentives that we have set out in our Final Determinations will further enable and encourage ETOs to act in manner consistent with the Net Zero targets.

8.10 This represents an increase in baseline Totex allowances compared to our Draft Determinations proposals, in recognition of additional evidence and an increased clarity on need.

8.11 Alongside these increased allowances, we are also providing a range of automatic uncertainty mechanisms in ET which will enable fast and responsive investments in the network. One of these, Incremental Wider Works, has specifically been updated since Draft Determinations to allow it to operate more effectively.

8.12 We are making re-opener mechanisms as agile as possible through proactive engagement with companies, which will encourage transparency on the pipeline of future projects both by us and the companies. We are also creating a tiered system which we can use to run fast-track and slow-track assessments which will reflect the importance/materiality of projects.

8.13 We are significantly speeding up the cash-flow to companies once re-opener applications have been approved by forecasting revenues from UMs in the annual iteration process. This should reduce the time lag from approval of funding to companies receiving revenue from the current 2 years to less than a year.

- 8.14 Our suite of outputs and incentives encourage companies to innovate as well as take some risk, ensuring licensees can continue to earn positive financial rewards by looking for new ways of doing things in RIIO-2.³⁹
- 8.15 We have also decided to introduce an agile re-opener mechanism for GD and GT: the Net Zero Pre-construction and Small Projects re-opener. This is in recognition of the fact that there will likely be a whole host of early development work, feasibility (including FEED) and, smaller value Net Zero related projects that won't be captured by baseline allowances but also won't be captured by our bigger re-openers.
- 8.16 This overall approach to Net Zero reflects Draft Determinations feedback that highlighted some concerns with our proposed Net Zero framework for RIIO including that:
- the level of Totex allowances we proposed in our Draft Determinations were insufficient and did not support the transition to Net Zero as our approach was too focussed on short term cost to consumers
 - the price control needs to be more agile in its response to Net Zero and there was a lack of detail on the operation of re-openers
 - RIIO-2 should embrace some additional, managed, risk
 - there are some gaps in funding (eg for early stage and pre-construction work and smaller projects, and in the time needed to get new RIIO-2 funding mechanisms operational)
 - our proposals dis-incentivised risk-taking and would result in companies cutting costs, to the detriment of future consumers.
- 8.17 We believe that our approach makes RIIO-2 agile and flexible enough to meet the challenges Net Zero brings at lowest cost to consumers, whilst meeting the needs of future consumers. The price control funds justified and known Net Zero investments upfront, whilst making available additional funding for investments that will materialise within the price control period. Our approach also encourages companies to innovate and take forward activities, using their Totex allowance, which could benefit future consumers.
- 8.18 Our approach ensures that companies can develop key large strategic investments and quickly undertake lower value Net Zero facilitation projects, whilst our agile

³⁹ The Impact Assessment published alongside the Final Determination also considers how the RIIO-2 framework incentivises desired behaviours and continues to deliver benefits to future consumers.

approach to managing the re-opener process will allow us to take a proportionate approach to assessing projects.

8.19 The rest of this Chapter sets out further detail on the cross-sectoral measures for Net Zero. Sector specific measures are discussed in the respective Sector Annexes.

Net Zero and re-opener development use-it-or-lose-it (UIOLI) allowance

Purpose: To enable network companies to fund early design and pre-construction work. It also allows GD and GT to undertake small Net Zero facilitation projects.

Benefits: Ensures that network companies are equipped to deal with the Net Zero challenge and can act quickly to changing demands on the energy system and support quicker project delivery.

Final Determination

Parameter	Final Determination	Draft Determination
Type	Mechanistic	This UIOLI allowance was not proposed in our Draft Determinations.
Output	No specific outputs set – A use-it-or-lose-it (UIOLI) allowance that should be spent in accordance with the Net Zero and Re-opener Development Fund governance document.	
Delivery date	31 Mar 2026	
Totex baseline allowances	NGET - £16m SHET - £12m SPT - £12m NGGT - £8.3m Cadent - £19.8m NGN - £4.5m SGN - £10.8m WWU - £4.7m	
Re-opener	No	
Reporting method	Annual RRP reporting, alongside reporting requirements for individual projects set out in the forthcoming Governance Document	
Adjustment mechanism	Formula defined in the licence	
Companies applied to	All ET, GT and GD networks	
Licence obligation	Special Condition 3.5	

Final Determination rationale and Draft Determination responses

- 8.20 We received over 20 responses to our Draft Determinations, including all of the network companies, arguing that our uncertainty framework as set out at Draft Determinations left a funding gap for the early development work that network companies need to do on projects that they intend to bring forward through re-openers. Respondents also highlighted that there was a funding gap for very small Net Zero facilitation projects that may be low in materiality but high in impact and value.
- 8.21 Respondents argued that this issue was particularly pertinent for RIIIO-2 given the large number of re-openers set out in our framework and the potential need for network companies to act quickly in response to Net Zero system needs.
- 8.22 To address this issue, we have decided to implement a Net Zero and Re-opener Development UIOLI allowance to fund small Net Zero facilitation projects – and also allow early development work on projects that companies intend to bring forward under the following re-openers:
- ET, GT, and GD – Net Zero Re-opener
 - GT and GD only - Net Zero Pre-construction and Small Projects Re-opener
 - ET only – Medium Sized Investment Projects (MSIP) Re-opener
 - GD only – Heat Policy re-opener and New Large Load Re-opener (if Net Zero related).
- 8.23 We are only extending this allowance to those re-openers because this is where companies may be required to undertake significant development work prior to a re-opener submission to help support Net Zero, but aren't already funded to do so elsewhere in the price control.
- 8.24 In early 2021, we will consult on a governance document which will set out the detailed arrangement for this UIOLI - included scope details and maximum project spends. We will aim to have it in place by 1st April 2021 and, until implemented, network companies cannot incur spend against this UIOLI allowance.
- 8.25 We expect that our consultation on the governance for this UIOLI allowance will set out our proposals on the following:
- the fund can be used for early development work such as desktop studies, optioneering, FEED studies, technical design and consenting

- the maximum cap which can be spent on an individual project using this UIOLI allowance
- where the work required to develop a project exceeds the cap we set, additional allowances for development work can be sought through the relevant re-opener at the time of submission
- the gas network companies (GD and GT) can also use this allowance to proceed with very small Net Zero (Hydrogen and Green Gas) facilitation projects that go beyond BAU. We are introducing this because we recognise that there may be low regret capital projects that have a high Net Zero impact but aren't material enough for our re-openers and are also not captured by our innovation mechanisms. We also recognise that the BEIS' Hydrogen Grid Research and Development programme may require small, repeatable projects that, again, may not be captured by other mechanisms.

8.26 We consider that providing an additional £88.1m of baseline funding through the Net Zero and re-opener development UIOLI allowance is justified because it will ensure that:

- network companies do not delay important development work on key re-opener projects whilst they wait for confirmation of regulatory approval of the construction costs for the project
- re-opener submissions are well developed and clearly set out when they are brought to us for assessment, which will allow us to make faster and more robust decisions
- smaller Net Zero facilitation projects, including repeatable hydrogen or green gas projects, do not fall through the cracks and allows companies to progress low material but high impact work.

Net Zero pre-construction and small projects re-opener

Purpose: To allow GD and GT network companies to undertake design and pre-construction work that is too material for the UIOLI and also to progress Net Zero facilitation projects that aren't material enough for the Net Zero Re-opener.

Benefits: Enables companies to progress small value, but high impact, Net Zero work in an agile way.

Final Determination

UM parameter	Final Determination	Draft Determination
UM type	Re-opener	This is a new re-opener in response to the feedback we received at Draft Determinations
Re-opener materiality threshold	£1m ⁴⁰	
Additional requirements	Detailed requirements will be published in our Governance Document in 2021	
Applied to	GD and GT companies	
Licence condition	Special Condition 5.5	

Final Determination rationale and Draft Determination responses

8.27 We have decided to create a new re-opener for the gas sector companies that provides an avenue for them to access funding for more material design and pre-construction work, as well as smaller Net Zero facilitation projects.

8.28 Respondents highlighted that the larger Net Zero Re-opener, and to some extent the Heat Policy Re-opener, did not capture:

- Early design and pre-construction work, some of which may go towards a larger re-opener application
- Smaller, Net Zero facilitation projects that may have a high Net Zero impact but are not material enough to be considered through the larger re-openers.

8.29 Further to this, respondents highlighted that there may be repeatable hydrogen and green gas projects which would not be captured by our Innovation mechanisms as they are not innovation but are, nonetheless, desirable and important.

8.30 Respondents also argued that there was a need for network companies to act quickly in response to Net Zero system needs - and that the agility and speed in which our suite of Uncertainty Mechanisms are operated should be proportionate and balanced.

⁴⁰ We expect individual projects worth less than £1m to be picked up through the UIOLI – as such we won't allow aggregation for this threshold to be met. We will, however, allow this threshold to be met by anticipated class of spend.

8.31 This re-opener addresses two key issues in consultation responses:

- routes to develop early design and pre-construction work like feasibility and Front End Engineering Design (FEED) studies
- funding to progress Net Zero facilitation projects that are not material enough to be captured by the Net Zero re-opener.

8.32 In early 2021, we will consult on a governance document which will set out the detailed arrangement for this re-opener. We will aim to have that document in place by 1st April 2021. We may also need to consult on another License Change.

Net Zero re-opener

Purpose: To introduce an increased level of adaptability into the RIIO-2 price control by providing a means to amend the price control in response to changes connected to the meeting of the Net Zero targets, which have an effect on the costs and outputs of network licensees.

Benefits: To allow for necessary amendments within the RIIO-2 period, as opposed to waiting until the settlement of the subsequent price control.

Final Determination

UM parameter	Final Determination	Draft Determination
UM type	Re-opener	Same as FD
Re-opener window	At any time in RIIO-2	Same as FD
Re-opener materiality threshold	An adjustment when multiplied by the TIM rate must exceed 0.5% of annual average ex ante base revenue.	1%
Authority triggered re-opener?	Yes	Same as FD
Applied to	Cross-sector UM - All ET, GT, and GD companies	Same as FD
Licence condition	Yes - Special Condition 3.6	Same as FD

Final Determination rationale and Draft Determination responses

8.33 In the Draft Determinations, we set out a proposal to introduce a mechanism that could be used to reflect changes connected to the achievement of the Net Zero targets not otherwise captured by any other RIIO-2 mechanism. We said that the

mechanism could be used by Ofgem at any time throughout the control period, rather than only in pre-set windows.

- 8.34 We proposed that the re-opener should have a wide scope, to help to ensure that RIIO-2 can be adaptable to a wide range of potentially relevant developments. We proposed that we would apply a materiality threshold in line with the common approach to re-openers.

Triggering party

- 8.35 In responses to Draft Determinations, views on which parties should have the ability to trigger the re-opener were mixed. The majority of the network companies, including all TOs and most GDNs, told us that they should have the ability to trigger the re-opener mechanism in addition to Ofgem. Reasons given by the network companies include seeking to avoid perceived delay, and that companies may be less willing to incur costs where they believe there is doubt over the subsequent recovery.
- 8.36 A GDN's CEG said that, on balance, it agreed that Ofgem should be the sole party with the ability to trigger the re-opener, based on close engagement with the networks who will draw issues to Ofgem's attention that are relevant.
- 8.37 A consumer body said that it acknowledged that Ofgem has suggested relevant matters could be discussed at the NZAG and that a consultation process had been proposed as part of the process to be followed in considering potential use of the re-opener. It said that that these mitigations struck "an appropriate balance to ensure that the re-opener is only triggered for material changes, and that network companies and other stakeholders can input their views."
- 8.38 An energy supplier said that it agreed with the proposal that only Ofgem should trigger this re-opener given its strategic, cross-sector context.
- 8.39 In our Draft Determinations, we said that input from stakeholders will be vital in allowing this proposed mechanism to work effectively. Through ongoing engagement with licensees, policymakers (including via NZAG) and a wider group of stakeholders, we will be able to gather sufficient information to inform our decision as to when this mechanism should be used.

8.40 Having considered responses to our Draft Determinations our view remains that Ofgem alone should retain the ability to trigger this mechanism. This is because this approach will help to ensure that the re-opener is only used where:

- It is the most appropriate mechanism to deal with a given change
- Ofgem has reached a view that the impact of the change in question should be funded via customers and otherwise reflected within the price control
- Ofgem is satisfied that there is a sufficient level of certainty over the change in question and its impact.

8.41 Additionally, the Net Zero and re-opener development use-it-or-lose-it allowance discussed above will provide companies with the ability to incur relevant expenditure without the need for this re-opener to be used.

Scope

8.42 In our Draft Determinations, we proposed that the re-opener should have a broad scope to ensure that RIIO-2 can be adaptable to a wider range of potential developments. We consider that a relatively broadly framed re-opener would be effective in enabling us to respond to a broad range of potential developments in RIIO-2. The scope of the re-opener will allow Ofgem to consider making adjustments to reflect changes in government policy, the successful trial of new technologies or other technological advances, changes in the pace or nature of the uptake of low carbon technologies and new investment arising from the agreement of a Local Area Energy Plan (or equivalent arrangements).

Materiality threshold

8.43 In the Draft Determinations, we proposed to apply the common materiality threshold for re-openers to the Net Zero Re-opener. As set out in Chapter 7 of this document, we have decided to lower the relevant threshold from 1% to 0.5%. In our view there is no compelling reason to adopt a different approach in the case of the Net Zero Re-opener. As this re-opener may only be triggered by Ofgem, Ofgem would need to expect that changes to allowances made under the re-opener would exceed this threshold level. Although some respondents expressed a preference for having no materiality threshold in the case of the Net Zero Re-opener, we consider that a materiality threshold will help to ensure that this mechanism is only used to reflect significant changes within RIIO-2.

Process

- 8.44 Several respondents requested additional clarity over where the Net Zero Re-opener sat within the overall suite of uncertainty mechanisms and how Ofgem would use the re-opener.
- 8.45 Subject to the consideration of all relevant available evidence we would consider whether a relevant change of circumstances that could have a material impact on RIIO-2 costs and/or outputs has occurred or is expected to occur.
- 8.46 Where a relevant change of circumstances is identified, we will consult to seek views on the anticipated impact of the change. This may relate to a single licensee or company, a single sector or all sectors. Stakeholders would at this stage have had the opportunity to make representations on whether, and how, the change should be reflected in the price control. This may take the form of a request to licensees for them to examine options and put forward a preferred solution in order to address the change of circumstances that has been identified.
- 8.47 We will consider responses and form a view on whether and what amendments to the price control are necessary. We would then seek to amend the price control accordingly. In reaching a view on whether (a) a relevant change of circumstances has or is expected to occur and (b) what amendments to the price control are necessary to reflect the change, Ofgem may consider, among other things:
- whether it would be appropriate for the change in question to be reflected in the price control and whether other price control mechanisms could be used to reflect it
 - whether it would be appropriate for any additional consequential activity to be funded via customers' bills
 - whether any potential adjustments are sufficiently material to proceed with triggering the re-opener
 - the extent to which stakeholders may support any potential adjustments
 - the level of certainty that the change of circumstances will occur and its impact on licensees' costs and outputs.
- 8.48 Given the range of potential developments that could be reflected in the price control via this re-opener, we do not believe it would be appropriate to indicate at this point the length of time that Ofgem will take in implementing any particular

changes. However, if appropriate, we will seek to give an indication on likely timings once the process has been initiated.

Overall rationale for mechanism

- 8.49 Respondents to our Draft Determinations generally agreed that arrangements should be put in place in order to deal with Net Zero-related uncertainties.
- 8.50 In our view, it is critical that the price controls enable the gas and electricity networks to support the achievement of Net Zero targets. We recognise that Net Zero policy will not develop in five-year segments, aligned with our RIIO-2 timetable. Accordingly, there may be circumstances during the price control period where assumptions made to set the price control are no longer appropriate, due to changes related to the transition to Net Zero.
- 8.51 Where material changes occur that require significant adjustment to expenditure due to changes in policy, the role of network companies, or technological or market developments, it may be necessary to make adjustments. This mechanism is, therefore, designed to increase or decrease allowed revenues, as well as amend outputs, during the period rather than waiting until the next price control review.

Innovation

- 8.52 Innovation will support the transition to a smarter, more flexible and sustainable low-carbon energy system. It will also help to reduce costs for consumers, including by finding new ways of operating and developing networks.
- 8.53 Innovation should be a core part of a companies' BAU activities – as part of our SSMD, we challenged companies to demonstrate more innovation in their BPs. We continue to think that, in the round, the RIIO-2 framework incentivises innovation and has the potential to benefit future consumers (see discussion on interlinkages in Chapter 11 and our Impact Assessment).⁴¹
- 8.54 In our SSMD, we decided to provide dedicated innovation stimulus funding in the form of a Strategic Innovation Fund (SIF), devoted to large-scale transformational research and development projects, and the NIA, devoted to smaller-scale process

⁴¹ The Impact Assessment published alongside the Final Determination also considers how the RIIO-2 framework incentivises desired behaviours and continues to deliver benefits to future consumers.

or technological innovations. In our Draft Determinations we consulted on the design and the level of funding available.

RIIO-2 Strategic Innovation Fund

Purpose: To support network innovation that contributes to the achievement of Net Zero, while delivering real net benefits to network companies and consumers; and to work with other public funders of innovation so that activities appropriately funded by network consumers are coordinated with activities funded by Government.

Benefits: Supports strategic network innovation projects that would not otherwise be supported by the price control or other sources of funding and contributes to the energy system transition.

Final Determination

Strategic Innovation Fund	Final Determination	Draft Determination
Key aims	<ol style="list-style-type: none"> 1. To support strategic innovation that contributes to the achievement of Net Zero targets and provides real net benefits to network companies and consumers including in the areas of decarbonisation of power, heat, transport and wider industry. 2. To coordinate network innovation funding with other public sector funding initiatives, ensuring greater strategic alignment and eliminating funding gaps. 3. To operate flexibly and fund innovation needs whenever they arise. 	Same as FD
Setting an innovation strategy	We will set the strategic focus for projects by working with the Government through the Net Zero Innovation Board. We will inform our Innovation Challenges by developing our own innovation narrative.	Proposed to rely on a sector-wide energy innovation strategy
Setting Innovation Challenges for SIF projects	We will set Innovation Challenges for companies to bring forward eligible projects.	Same as FD
Frequency of Innovation Challenges	We will set Innovation Challenges for SIF projects across RIIO-2 to target strategic issues whenever needed.	Same as FD
Scope of eligible projects	Strategic projects that would not otherwise be taken forward as BAU or through any other price control mechanism, where (a) access to the assets of a network company is essential, or (b) in the	Same as FD

Strategic Innovation Fund	Final Determination	Draft Determination
	case of third-party innovators, the innovation would not happen but for the provision of SIF funding.	
Requiring industry collaboration and third-party involvement	Innovation Challenges will include requirements relating to the composition of consortiums and project partnerships that bid in for funding, where appropriate.	Same as FD
Value of funding available	High-value innovation projects over £5m and total funding pot of £450m, with scope to increase if necessary. ⁴²	Same as FD
Percentage of innovation project funded	Minimum 10% compulsory contribution is required, with a larger contribution in some cases.	Level of compulsory contribution to be confirmed on a case-by-case basis.
Source of funds for the approved projects	Default position is that approved projects will be funded via use of system charges collected by ESO and NGGT. We will also consult on alternative methods of funding high value projects.	All projects to be funded via use of system charges.
Evaluation of projects	We will appoint an independent expert panel to evaluate projects and provide recommendations to Ofgem.	Same as FD
Administration of SIF	We will appoint a third party to administer the SIF and consult on related arrangements in due course.	Same as FD

Final Determination rationale and Draft Determination responses

8.55 We have decided to implement the SIF, retaining most of the design features we proposed in Draft Determinations. We think the SIF will provide valuable support to help facilitate the transition to Net Zero. Most of the 37 responses support this, and recognised the benefits of increased coordination with other public funders of innovation, increased strategic direction within innovation funding, with the use of Innovation Challenges, and the focus on strategic issues associated with the energy system transition to enable the transition to Net Zero carbon emissions.

8.56 However, there was some criticism with the SIF's broad design suggesting that, relative to the RIIO-1 NIC, the changes could increase barriers for third party participation and that the change in process could create confusion. We disagree because third parties will continue to have the same opportunity to participate in

⁴² This is the value of funding available to GD, GT, ET and ESO SIF projects. However, we note that the value of funding available is based on the level of NIC funding available for all sectors (GD, GT, ET, ESO and ED) in RIIO-1. The ED2 RIIO-2 Sector Specific Methodology Decision will separately consider the application of this value to ED.

innovation projects as they do under the NIC, and we have decided Innovation Challenges will include requirements relating to the composition of consortiums and project partnerships that bid in for funding, where appropriate.

- 8.57 There was also some concern that the proposed focus of the SIF could lead to other innovation being missed. As explained in our SSMD, we think the nature of challenges presented by the energy system transition means we need to move away from the approach adopted within the NIC in RIIO-1, and move towards a challenge-based approach for high-value innovation projects and increasingly focus on key strategic innovation priorities.⁴³ Additionally, companies are not solely reliant on SIF funding to take forward innovation – as explained in Chapter 11, the package of incentives in RIIO-2 continues to offer appropriate incentives and reward companies who take forward innovation.⁴⁴ Additionally, companies have access to NIA funds for smaller scale innovation projects.
- 8.58 Other specific issues raised by stakeholders are detailed in Table 11 below and we have made some changes to our position after considering these.

⁴³ RIIO-2 SSMD Core Document, page 82

⁴⁴ For example, the TIM incentivises innovation, encouraging companies to consider more efficient ways of doing BAU activities. The TIM incentivises efficiencies within upfront Totex allowances, and also when delivering projects funded via uncertainty mechanisms. We have considered the strength of the TIM in Chapter 10.

Table 11: Summary of stakeholder feedback on the SIF and Ofgem’s response

Stakeholder issue	Ofgem’s response
Key aims: One response suggested that environmental gain should be an aim for SIF.	No change: We think the focus on strategic innovation that contributes to the achievement of Net Zero targets sufficiently captures environmental gain.
Setting an innovation strategy: One stakeholder commented that the SIF Innovation Challenges must align with government-wide policies and not just energy sector ones. Some gas network companies queried if projects within the remit of the Hydrogen Programme Development Group (HPDG) would be fast tracked.	Change from DD: we recognise feedback on the desire for external visibility and certainty on future Innovation Challenges and have decided to develop our innovation narrative to provide external visibility and certainty on future Innovation Challenges. However, we think that engagement with the cross-Government Net Zero Innovation Board will help us to coordinate our programme with Government departments, where appropriate, and to take account of wider Government priorities. As this approach allows close coordination with Government departments, the SIF will enable us to support projects within the remit of the Hydrogen Programme Development Group (HPDG) as and when necessary.
Setting Innovation Challenges for SIF projects: There was widespread feedback in responses on the need for more certainty about the type of Innovation Challenges that would be developed and the project pipeline. Most stakeholders emphasised the need to coordinate with industry. Some stakeholders queried whether top-down Innovation Challenges would capture innovation demands. One CEG argued that the approach should not lead to an electricity or urban bias, resulting in an unfair distribution of benefits.	No change: As explained in our SSMD, we think the need to focus on enabling Net Zero means that we should adopt a strategic approach to innovation and set top-down Innovation Challenges. We do recognise that potential recipients of innovation funding (innovators, network companies and the ESO) will have views that could helpfully feed into this process. Accordingly, as we develop further detail on the operation of the SIF, we will consider how to gather the views of potential recipients of innovation funding when identifying Innovation Challenges. We also note that our decision, explained above, to develop our own innovation narrative which identifies our future Innovation Challenges, will help to provide additional certainty on our view of priority areas, prior to our engagement with Government departments. It will also support companies’ development of a project pipeline.
Frequency of Innovation Challenges: Some responses commented that Innovation Challenges would need to be set frequently and should not be an annual event. One CEG also requested a commitment for the SIF to be operational by 2021. Another response suggested if the SIF was not	No change: We think our Draft Determination proposal to set Innovation Challenges to target strategic issues as they arise and whenever necessary is sufficient as it will enable us to set Innovation Challenges as frequently as necessary. We do not think it is necessary to roll over the RIIO-1 NIC into 2021 because we aim to set the first SIF Innovation Challenge in 2021 and fund projects in the first year of RIIO-2. Additionally, taking time to re-establish the NIC could delay the implementation of the SIF.

Stakeholder issue	Ofgem's response
ready to be operational in 2021, then the RIIO-1 NIC should be rolled over.	
Scope of eligible projects: Some responses disagreed with the proposed focus on the energy system transition.	No change: We continue to think the nature of challenges presented by the energy system transition means the SIF needs to focus on key strategic innovation priorities associated with the energy system transition.
Requiring industry collaboration and third-party involvement: One supplier noted the separate ED2 timeline and noted it was unclear how DNOs would engage with the SIF before ED2 starts in 2023.	No change: Ahead of the start of ED2 in 2023, DNOs will continue to have access to RIIO-1 NIC funds in 2021 and 2022. Although DNOs will not be able to submit bids for SIF funding before then, provided that the DNO component of the project in question satisfies the RIIO-1 NIC funding criteria, DNOs could collaborate with other network companies and the ESO using RIIO-1 NIC funding, when those others submit bids for SIF funding.
Value of funding available: One network company suggested the £5 million threshold for SIF projects might result in missed innovation opportunities, given the gap between NIA projects and the SIF threshold. An academic and a trade body also highlighted that the high materiality threshold could limit the ability of third parties to benefit from SIF funding. Another response from a CEG noted the size of the SIF set at RIIO-1 levels despite an acknowledgement from Ofgem of increased innovation requirements.	No change: We do not think that there is gap between the NIA and the SIF because there is no maximum value for individual NIA projects. We think that the £5m minimum threshold for SIF projects is appropriate considering the SIF's focus on high-value innovation projects and the availability of NIA funding for projects below that threshold. We do not think the proposals for the SIF will undermine third-party involvement because we have decided that our Innovation Challenges will impose requirements on third party involvement within projects where it is appropriate. This will help ensure network companies seek partnerships with third parties. Additionally, third parties also continue to have opportunities to participate in NIA projects. We also note that the total level of funding available via the SIF can be increased, if necessary, which would enable us to respond flexibly to increased innovation needs during RIIO-2.
Percentage of innovation project funded: One CEG suggested that the proposal to change the level of compulsory contribution depending on the Innovation Challenge set might create uncertainty and result in low participation in the SIF. Several other responses from network companies and the	Change from DD: We recognise that varying the level of compulsory contribution increases uncertainty and have decided to provide for a default level of compulsory contribution of 10%. We think this is an appropriate level for most projects because it will ensure companies share some of the risk of innovation, while recognising that companies and project partners will benefit from successful projects in the longer term.

Stakeholder issue	Ofgem's response
<p>ESO requested further detail on when it would be appropriate to vary compulsory contributions.</p>	<p>For most projects we do not think we should require more than a 10% compulsory contribution because the nature of a price control does limit the short-term payback companies can receive from SIF projects. However, we continue to think it may be appropriate to vary the compulsory contribution in some instances and we reserve the option to do so where it would be appropriate for network companies and the ESO (as opposed to consumers) to take an increased share of the risk, or where it is clear that other sources of funding should also be contributing to projects because of the nature of the benefits that the project delivers.</p>
<p>Source of funds for approved projects: One network company suggested that it may not be appropriate to fund high value projects via network charges and suggested it may be more appropriate to fund these as part of companies' asset base.</p>	<p>Change from DD: We recognise that, exceptionally, projects may have a significant short-term impact on network charges and have made the decision to consult on possible alternative funding mechanisms for such projects as part of our consultation on SIF governance. However, we think that the use of system charges is appropriate for funding most SIF projects and have decided to make this our default position.</p>
<p>Evaluation of projects: No responses challenging our proposals.</p>	<p>No change: We have decided to appoint an independent expert panel to evaluate projects and provide funding recommendations to Ofgem because we think this will ensure robust scrutiny of projects, plus we think such an approach has been valuable in the RIIO-1 NIC.</p>
<p>Administration of SIF: Some network companies were supportive. Other respondents, including an academic, were critical and queried the value of third-party administrators, or noted that it was difficult to comment on the proposal until fuller details of the role of the administrator were known. One network company asked how the administrator would be paid for.</p>	<p>No change: We continue to think that the appointment of a third-party administrator will be beneficial and bring expertise to running a challenge-based approach to innovation funding. It will also support our aim to coordinate the operation of the SIF with other public bodies. We will consult on the role and funding of the administrator as part of our consultation on SIF governance.</p>

8.59 Additionally, most of the responses on the SIF sought further detail on its operation and noted the importance of introducing it as soon as possible.

Additional detail was requested on:

- the focus of the Innovation Challenges and when they would be set
- how network companies and the ESO would be involved in the process of identifying innovation priorities and setting Innovation Challenges
- the specific requirements that may be imposed in relation to industry collaboration and third-party involvement in projects submitted for funding
- the process and criteria used to evaluate projects, including the potential composition of the expert panel which would evaluate projects
- the role of the third-party administrator and how such an administrator would be funded.

8.60 We note the importance of these issues and we will consult on full details on the operation of the SIF and the governance underpinning it, with the aim of the first Innovation Challenge being set in 2021 and funding projects in the first year of RIIO-2.

RIIO-2 Network Innovation Allowance

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

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

Final Determination

Company	Business Plan proposals (£m)	Updated proposals⁴⁵ (£m)	Draft Determinations (£m)	Final Determinations (£m)
Cadent	40.0	59.5	32.5	32.5
NGN	11.5	15.9	11.5	11.5
SGN	65.9	51.4	30.0	35.6

⁴⁵ NGN, NGGT and Cadent requested additional NIA funding, not requested in their Business Plan, in their Draft Determination response.

Company	Business Plan proposals (£m)	Updated proposals⁴⁵ (£m)	Draft Determinations (£m)	Final Determinations (£m)
WWU	13.3	13.3	13.3	13.3
NGGT	30.9	70.0	20.0	25.0
NGET	75.6	75.6	49.3	49.3
SPT	13.5	13.5	10.0	13.5
SHET	8.0	8.0	8.0	8.0
ESO	45.0 (2021-26)	45.0 (2021-26)	7.2 (2021-23)	20.7 (2021-26)
Total		303.7	181.8	209.4

Network Innovation Allowance	Final Determination	Draft Determination
Improving NIA reporting	Network companies and the ESO have satisfied the condition for NIA funding we imposed in the Draft Determination by establishing an improved reporting framework. We will incorporate the improved industry-led reporting framework in the RIIO-2 governance arrangements.	We proposed that the provision of NIA funding was conditional on an improved, industry-led reporting framework being ready for the start of RIIO-2.
Provision of NIA funding	To introduce a power for Ofgem to direct additional NGGT and GDN NIA funding for hydrogen innovation during RIIO-2.	We did not propose a mechanism to potentially increase NGGT and GDN NIA during RIIO-2.
Funding arrangements	To provide all companies (including the ESO) with a 'use it or lose it' allowance covering the five-year price control period.	We proposed a five-year 'use it or lose it' allowance for network companies and a two-year allowance for the ESO.
Scope of eligible projects	<ul style="list-style-type: none"> Projects must focus on the energy system transition and/or addressing consumer vulnerability. Projects taken must have the potential to deliver net benefits for consumers within the sector. To make novel applications of commercially available technologies eligible for NIA funding. 	We proposed that commercially available technologies would not be in scope for RIIO-2 NIA.
Considering impact of innovation on vulnerable consumers	To require companies to conduct an impact assessment to assess the expected effects of innovative solutions upon vulnerable consumers.	Same as FD
Increasing third party involvement	To require companies to produce guidance for third parties on the	Same as FD

Network Innovation Allowance	Final Determination	Draft Determination
	treatment of Intellectual Property Rights (IPRs) in NIA.	
Quality assurance of projects	To require companies establish a quality assurance framework for RIIO-2 NIA Projects.	Same as FD

Final Determination rationale and Draft Determination responses

Improving NIA reporting

8.61 The industry-led reporting framework satisfies the condition we imposed in our Draft Determination⁴⁶ and we have decided to implement that framework as part of the RIIO-2 NIA governance arrangements. The need for an improved reporting framework was supported by the vast majority of stakeholders who commented on it. Network companies mentioned the progress they had made in developing the framework through the ENA, the importance of consistent reporting and the need to confirm the reporting arrangements and incorporate them in governance arrangements as soon as possible. On that basis we have also decided to incorporate the improved framework in the RIIO-2 NIA governance arrangements.

Provision of NIA funding⁴⁷

8.62 We have decided to make £209.4m in NIA funding available to network companies and the ESO, £27.6m more than our Draft Determinations after considering responses on our approach to setting RIIO-2 NIA.

8.63 A consumer representative body suggested that we should have provided further detail of our views on each company's NIA proposals in our Draft Determinations. This was not possible, as we did not require companies to provide project-by-project plans, because NIA is a use-it-or-lose-it-allowance that provides companies flexibility to take forward innovation which may, at this time, be unknown. Instead of assessing NIA requests at a project level, we determined NIA funding by considering innovation plans against criteria detailed in our SSMD and the Draft Determination.⁴⁸

8.64 We evaluated the evidence provided in response to our Draft Determinations and considered whether it changed our assessment against the criteria set out in our

⁴⁶ Draft Determinations Core Document, paragraphs 8.73-8.74.

⁴⁷ Our assessment of companies' individual NIA requests are detailed in company annexes.

⁴⁸ SSMD Core Document, paragraph 10.62; Draft Determinations Core Document, paragraphs 8.70-8.72.

SSMD and Draft Determinations. Some responses supported our approach to benchmarking NIA requests against RIIO-1 levels of funding, while others questioned that approach. The latter generally emphasised that RIIO-2 poses new challenges with respect to net-zero, highlighting increased innovation requirements. Therefore, we have individually considered the justifications for requested increases in NIA funding made by companies. Providing companies have satisfied the criteria we set out in our SSMD and Draft Determinations, we have decided to award several companies a higher level of NIA funding than they received in RIIO-1.

Provision of NIA funding: power to increase gas NIA funding to support additional hydrogen innovation during RIIO-2

- 8.65 In their Draft Determinations responses, NGGT, NGN and Cadent requested additional NIA funding, beyond that requested in their BPs, citing a need for hydrogen innovation they had not previously foreseen.
- 8.66 We recognise that in the gas sector, there is uncertainty around the extent to which gas networks may, in the future, have a role in transporting hydrogen and the extent of innovation activity needed to support this. Therefore, we have decided to introduce a mechanism to provide NGGT and GDNs additional NIA funding for hydrogen innovation activities during RIIO-2 if the level of NIA funding we have decided to provide proves insufficient.⁴⁹
- 8.67 A mechanism to increase NIA funding will not be introduced for electricity transmission because, at the time of BP submission, there was greater certainty around the innovation activities needed to reach Net Zero than in the gas sector.⁵⁰
- 8.68 Considering that these hydrogen innovation activities will be beyond those specified within BPs, we will adopt a different set of criteria to those set out in our SSMD and Draft Determinations to determine whether to increase the level of NIA funding provided to NGGT and GDNs during RIIO-2. We will consider, among other things:
- whether NGGT and GDNs have undertaken a balanced portfolio of NIA projects. We expect companies to have a balanced portfolio of NIA projects, in line with their Innovation Strategy, that addresses challenges besides

⁴⁹ To enable a more rapid adjustment, we will amend gas network companies' licenses to enable NIA to be revised during the price control period by Authority direction.

⁵⁰ Due to the nature of the ESO's price control, the ESO will also have the opportunity to request additional NIA funding for 2023-26 in the submission of BP2.

hydrogen e.g. biomethane blending, gas leakage reduction and consumer vulnerability

- whether there is a clear need for hydrogen innovation expenditure that was uncertain at the time of Final Determinations
- whether NGGT and GDNs have coordinated their innovation activities so that they are not duplicating
- whether where appropriate companies involved third parties in innovation projects
- whether it is appropriate to fund additional activity via consumer bills
- the extent to which stakeholders may support NIA adjustments - this may include engagement with the cross-Government Net Zero Innovation Board and Ofgem's Net Zero Advisory Group.

Funding arrangements

8.69 We have decided to award all network companies and the ESO NIA funding to cover the five-year duration of the price control period. This is a change from our proposal to award the ESO a two-year allowance. Due to the nature of the ESO's price control, the ESO will have the opportunity to request additional NIA funding for years 2023-26. However, we recognise feedback from almost all respondents that a two-year innovation allowance for the ESO would limit its ability to coordinate with network companies in innovating over the price control.

Scope of eligible projects: focus on energy system transition and/or addressing consumer vulnerability

8.70 We have decided that projects must focus on the energy system transition and/or addressing consumer vulnerability. The focus on these issues was supported by most of those who commented on the proposal.

8.71 However, it was clear from some consultation responses that there was some confusion as to whether both the energy system transition and consumer vulnerability need to be targeted within each project. While some stakeholders considered that looking at both issues together is increasingly important as we transition to Net Zero, we think that approach is too restrictive. There is the flexibility within NIA arrangements to consider both issues together, but it is not a requirement. As discussed below, even those projects which focus only on the energy system transition need to consider the impacts of the innovation upon vulnerable consumers.

Scope of eligible projects: potential to deliver net benefits

8.72 We have decided that projects taken forward by network companies must have the potential to deliver real net benefits for consumers within the relevant sector because we want to ensure that NIA funding can support projects which deliver wider whole system benefits. This is consistent with our Draft Determination position and was supported by a few respondents who commented on this proposal and agreed that not all NIA projects need to deliver financial benefits.

Scope of eligible projects: novel applications of commercially available technologies

8.73 We have decided that novel applications of commercially available technologies will be eligible for NIA funding because, after considering responses, we recognise these may be risky, require NIA funding to progress and increase the likelihood that innovation funding will deliver benefits to consumers. Although there was support from some respondents, including consumer bodies, for our proposal to exclude commercially available technologies, several innovators and network companies argued that NIA funding is still needed for new and novel applications of commercially available technologies. Additionally, our changed position recognises feedback from one TO commented that our Draft Determinations proposal could reduce the benefits delivered to consumers from innovation projects, because a focus on non-commercially available technology would increase the risk of innovation activity.

Considering the impact of innovation on vulnerable consumers

8.74 We have decided to introduce a requirement that companies undertake an impact assessment to assess the expected effects of innovative solutions upon vulnerable consumers. This maintains our Draft Determination proposal. Although some network companies noted that an assessment on individual projects may be disproportionate, the proposal was supported by other respondents, including consumer and environment bodies, who believed it was important to highlight any negative impact that some innovation solutions may have on different groups of consumers. Several responses also discussed how the impact assessment should be undertaken and agreed on the importance of a standardised assessment methodology. We agree that the impact assessment needs to be underpinned by a detailed methodology and will require the network companies and the ESO to this within the NIA governance arrangements.

Increasing third party involvement

- 8.75 We have decided to introduce the requirement for network companies, and the ESO, to collaborate in producing guidance for third parties on the treatment of Intellectual Property Rights (IPRs) in the NIA. This will help encourage third party involvement as the IPR arrangements can be seen as a barrier to partnering, due to their perceived complexity. This decision is consistent with our Draft Determination position and supported by some consultation responses.
- 8.76 We do not, however, seek to revise the NIA IPR arrangements adopted in RIIO-1. Although there were responses which queried whether specific IPR requirements used in the RIIO-1 NIA governance need to be more flexible and/or revised, we continue to think that the IPR arrangements are appropriate and enable learnings to be disseminated. Our expectation is that additional clarity offered by the new guidance will help to resolve uncertainties and inconsistencies on IPR rules.

Quality assurance of projects

- 8.77 We have decided that network companies and the ESO must establish a quality assurance framework for RIIO-2 NIA projects, consistent with our Draft Determination proposal.
- 8.78 Several responses noted the benefits of quality assurance and provided suggestions on an appropriate regime. Several responses noted that network companies should not be reviewing each other's projects and supported reviews by third parties such as suppliers, CEG/UGs and universities. Other suggestions built upon this and suggested quality assurance reviews at project inception and at project completion. However, it was widely noted by respondents that any quality assurance framework should be proportionate, and different measures may need to be adopted based on project value. Additionally, innovation can result in failure due to its inherent nature- and this was to be an expected and should be an acceptable outcome within any quality assurance regime.
- 8.79 Responses from some network companies suggested that additional measures are not needed because existing practices adopted within ENA innovation groups are sufficient and additional measures are likely to be bureaucratic and time consuming. Whereas other network companies suggested that quality assurance should be a component part of the improved reporting framework, which will provide additional scrutiny of projects.

8.80 We recognise the range of responses on this issue and think that widespread support from non-network companies for additional quality assurance demonstrates that existing practices adopted within RIIO-1 are insufficient. We agree that there is an interlinkage with the improved industry-led reporting framework and including quality assurance measures within that will help ensure the proportionality. We will therefore require that the industry-led reporting framework include a quality assurance framework for RIIO-2 NIA projects.

Closing out RIIO-1 NIA

Purpose: To prevent a cliff edge of funding. This may prevent abrupt ending of some NIA projects, and potential reductions in innovation activity.

Benefits: To enable project completion, and resulting lessons learned to be shared across industry, with potential consumer benefits.

Final Determination

Closing out RIIO-1 NIA	Final Determination	Draft Determination
Change of end date for spending RIIO-1 NIA funds	Allow companies to carry over any unspent 2020/2021 NIA funds in RIIO-1 into the first year of RIIO-2. Projects utilising these carry over RIIO-1 NIA funds must start before 31 March 2021. Any unspent 2020/21 RIIO-1 NIA funding will be lost on 31 March 2022.	Same as FD

Final Determination rationale and Draft Determination responses

8.81 We received twenty-five responses to our proposal to allow companies to carry over their unspent 2020/2021 NIA funds into 2021/2022, all of which agreed that unspent funds should be carried over.

8.82 Two respondents would like RIIO-1 projects to be eligible for RIIO-2 NIA funding, and for any RIIO-1 allowance for projects that are unable to complete to be added to the RIIO-2 NIA allowance. We consider that further changes to account for these two scenarios are unnecessary, given the ability to carry over 2020/2021 funds for one year and the new allowances that will start in 2021.

- 8.83 Three respondents queried whether the same principle should be applied to the RIIO-2 price control allowance to avoid a slowdown in activity in the last year of the price control. In response to this feedback, we recognise that innovation activity may slow down towards the end of each price control period because of the stop-start nature of funding, however to mitigate this we are providing a five-year allowance in RIIO-2 to provide companies with increased flexibility when taking forward NIA projects, avoid peaks and troughs throughout the price control and hopefully avoid similar problems companies experienced with NIA projects at the end of RIIO-1.
- 8.84 We have decided to amend the end date for spending RIIO-1 NIA funds in light of the strong stakeholder support for our Draft Determinations position. As set out in Draft Determinations, we consider that there is consumer benefit in allowing these projects to be completed due to the resulting lessons learned to be shared across industry. We will update the associated RIIO-1 NIA Governance Document to allow for this change.
- 8.85 This decision will not require companies to re-register any affected projects. Each network’s proposed value for CNIA should be reported for inclusion in the PCFM (published after these Final Determinations), and an equivalent to RIIO-1 RRP table 3.13 will be in place in RIIO-2 for reporting any carried over NIA spend under the July 2022 RRP process.

Improving data transparency within innovation projects

Purpose: To maximise the value of data to energy consumers.

Benefits: Increased data transparency, collaboration between network companies and the ESO, and third-party involvement within innovation projects.

Final Determination

Wider innovation-related requirement	Final Determination	Draft Determination
Data transparency	All data within innovation projects funded via the NIA and SIF will be expected to follow our Data Best Practice Guidance.	Same as FD, although in Draft Determination we proposed that ‘all work relating to data’ be subject to the requirement.

Final Determination rationale and Draft Determination responses

- 8.86 We have decided to implement the requirement that all data within NIA and SIF innovation projects will be expected to follow our Data Best Practice Guidance. This is consistent with our proposal in our Draft Determinations, but a small change has been made to clarify that 'all data' within innovation projects will be expected to follow our Data Best Practice Guidance, rather than 'all work relating to data' as we stated in our Draft Determination.
- 8.87 This change has been made after considering feedback from some responses which suggested that our proposed requirement could have been expressed more clearly. Apart from that feedback, there was support from most of the respondents to this question for our proposals to subject innovation projects to follow Data Best Practice Principles.
- 8.88 A few network companies mentioned that cost and benefits should be considered as trade-offs on a case-by-case basis, and the Data Best Practice Guidance was not yet fully developed and would need to be agreed with licensees before implementation. As explained in Chapter 4, we have engaged widely with industry on the development of this guidance and are due to consult on it. Considering innovation projects need to build upon the past and share learnings, support collaboration and support third-party involvement in projects, we believe it is important that all projects by default follow the guidance. We do, appreciate that there may be situations where data has to be de-sensitised before it can be made open, or can only be shared with certain parties – the guidance will enable that.
- 8.89 Additionally, one User Group noted that data best practice is an evolving target and emphasised that such requirements need to continue to evolve over time. We agree that best practice will continue to evolve and the Data Best Practice Guidance document will be updated over time to reflect this.

Enabling whole system solutions

- 8.90 In our SSMD, we introduced a whole system element to the BPI, a new whole system re-opener (the CAM), and a whole system consideration to the innovation stimulus.
- 8.91 The intention of these policies is to ensure whole system thinking is embedded in corporate structures (through the criteria for the BPI) so that opportunities could

be uncovered both at the planning stage, and throughout the length of the price control. Once an opportunity is identified, the CAM could be used to reallocate existing planned activities to another network best placed to deliver them, or, where the technologies or processes are less developed, the innovation stimulus could be used to prove the concept.

Business Plan Incentive – whole system elements

- 8.92 In the Business Plan Guidance we required companies to evidence plans and processes for joint planning with other networks, effective identification and adoption of potential whole system solutions and approaches, and demonstration of long-term whole system thinking and value for consumers and the wider society.
- 8.93 In our Draft Determinations, we said that all GT, ET and GD network companies had met the whole system related BPI Minimum Requirements. We confirm our Draft Determinations position. However, we still consider that the majority of plans did not go above and beyond the minimum, and often comprised stand-alone proposals rather than a shift in corporate thinking. Such an approach risks falling behind on the Net Zero agenda, and we encourage companies to continue to move away from a network-centric view and improve their systemic approach to evaluating impacts and opportunities more widely across the energy system.
- 8.94 Our views on each company’s whole system bespoke outputs have been set out in the company annexes.

Whole system re-opener

- 8.95 Our decision and rationale on the CAM is set out in Chapter 7, alongside discussion of other uncertainty mechanisms. We have decided to implement our Draft Determinations position, in line with consultation responses, but have clarified issues of timing and process.

Whole system consideration in the innovation stimulus

- 8.96 As per our position in Draft Determinations, we have designed the NIA and the SIF to enable companies to support whole system-related innovation projects that they may not otherwise do as part of BAU activities. We note that whole system thinking - in the form of joint work across energy vectors - is much more advanced in innovation than other areas of the BPs.

Directly Remunerated Services (DRS)

8.97 In responses to the Draft Determinations, some network companies raised the issue of unclear payment routes to other networks under DRS, in particular for services that subsequently involve ongoing responsibilities, eg future asset maintenance. We consider that the introduction of the CAM will enable complete reallocation of responsibility for the relevant output to the network undertaking the work.

9. Increasing competition

- 9.1 Competition in the design and delivery of energy networks is a central aspect of the RIIO-2 price controls. It has a key role to play in driving innovative solutions and efficient delivery that can help us meet our decarbonisation targets at the lowest possible cost to consumers.
- 9.2 In our SSMD, we confirmed that we are looking to extend the use of competition in RIIO-2 where it is in the interest of consumers. This Chapter sets out our decisions on each of our Draft Determinations proposals for how “early” and “late” competition will feature within the RIIO-2 package.
- 9.3 Our decisions on competition may increase the ESO’s role in shaping the evolution of the networks and electricity system. The ESO’s price control framework has inbuilt flexibility to accommodate such an evolving role.

Expansion of late competition

- 9.4 In our SSMD, we confirmed that we consider that it is in the interests of consumers to be able to apply, where appropriate, late models for competition in ET, GT, and GD:
- the Competitively Appointed Transmission Owner (CATO) regime
 - the Special Purpose Vehicle (SPV) Model
 - the Competition Proxy Model (CPM).⁵¹
- 9.5 We also confirmed the criteria for identifying projects that may be suitable for late model competition across the electricity transmission and gas sectors.⁵² These criteria are as follows:
- new
 - separable
 - high-value: projects of £100m or greater expected capital expenditure.

⁵¹ Further detail on proposed CPM arrangements are included within Appendix 2.

⁵² SSMD Core Document, paragraph 10.92.

9.6 In our SSMD, we explained that we expected network companies to identify in their BPs those projects that they considered were likely to meet the criteria for competition. Our RIIO-2 Business Plan Guidance⁵³ requested that network companies identify each project expected to fall into the high value criteria category (involving capital expenditure of £100m or greater). Network companies were also required to assess such projects against the other new and separable criteria for competition to confirm their potential suitability for our late models of competition. Where relevant, they were also expected to consider how any such projects that did not meet the new and separable criteria could be repackaged to create projects that meet the two criteria.⁵⁴

Final Determination

Late competition	Final Determination	Draft Determination
Application of late model to projects funded in baseline allowances	We have decided that it is not in consumers' interests to apply late models of competition to these baseline funded projects.	Same as FD
Consideration of application of late model to projects eligible for UMs	All projects in all sectors that meet the criteria for competition and are brought forward under a UM will be considered for potential delivery through a late competition model.	Same as FD
Network company development requirements	Network companies should develop projects in a way that avoids creating unnecessary barriers to these projects being delivered efficiently through one of our late competition models	Companies must ensure that they do not carry out any development work on eligible UM projects that is detrimental to the application of late competition.
When we will make our decision on whether or not to apply a late competition model to projects eligible for UMs	We will aim to reach our decision on individual projects as soon as practically possible once the relevant project design is appropriately settled. At the latest, this is expected to be the point at which we	Same as FD

⁵³ Paragraph 2.78, [Business Plan Guidance, Ofgem, October 2019](#).

⁵⁴ Page 22, [Extending competition in electricity transmission: Decision on criteria, pre-tender and conflict mitigation arrangements](#), Ofgem, November 2016.

Late competition	Final Determination	Draft Determination
	approve the design put forward by the developing network company. Figures 8 and 9 set out the relevant process maps for GD/GT and ET, respectively.	
What we will consider in deciding whether to apply a late competition model to projects eligible for UMs	Our decisions will be informed by relevant considerations, including the RIIO-2 Impact Assessment on late competition ⁵⁵ and a project-specific assessment of the consumer impact of applying the competition models.	Same as FD

Final Determination rationale and Draft Determination responses

Application of late model to projects funded in baseline allowances

- 9.7 We have decided that we do not consider it is in consumers' interests to apply late models of competition to projects funded in baseline allowances. This is unchanged from our Draft Determination proposals.
- 9.8 Our Draft Determinations position was based on a number of factors. Firstly, it is unlikely that the CATO and SPV models will be sufficiently developed to deliver these projects without some level of delay that may not be in the interest of consumers. Secondly, given that the focus of the majority of the proposed baseline projects concern the upgrading of existing assets, there is some uncertainty around the extent to which these baseline projects will meet the new and separable criteria for competition. Thirdly, as referenced in our May 2020 decision on the Hinkley-Seabank project, and consultation on the Shetland project, recent market conditions and our finance proposals for RIIO-2 suggest that we may not be able to have sufficient confidence that the application of the CPM to projects that need to start construction at the start of the RIIO-2 period would deliver benefits to consumers for the projects for which we are providing baseline allowances.^{56,57}

⁵⁵ [RIIO-2 Impact Assessment on late competition, Ofgem, May 2019.](#)

⁵⁶ Chapter 5, [Shetland transmission project: Consultation on proposed Final Needs Case and Delivery Model](#), Ofgem, April 2020.

⁵⁷ Chapter 3, [Hinkley - Seabank: Updated decision on delivery model](#), Ofgem, May 2020.

- 9.9 All responses to Draft Determinations on this point supported our proposed approach and we have decided to adopt that approach.

Consideration of application of late model to projects eligible for UMs

- 9.10 We have decided that all projects in all sectors that meet the criteria for competition and are brought forward under a UM will be considered for potential delivery through a late competition model. This is unchanged from our Draft Determination proposal.
- 9.11 In Draft Determinations we explained that Network companies should expect that we will assess all “large” investment projects in RIIO-2 against the other two criteria for competition and where appropriate consider them for our late competition models. We explained that if only part of a project meets the criteria for competition, we will consider whether to split the project up to apply a model of late competition to the part that meets the criteria for competition.
- 9.12 Most responses on late competition were supportive of this proposal, though a number of these emphasised the importance of competition not leading to delays in the delivery of critical infrastructure that will help us reach Net Zero. In terms of network companies, whilst National Grid and Cadent specifically noted their support for the CATO model, most were critical of our Draft Determination proposals. They suggested that we had not sufficiently demonstrated that the proposed late competition models would be beneficial for consumers, particularly in light of changes to RIIO-2 parameters since SSMD. A number of network company responses also explained why they consider the projects we had identified as ones we would consider applying late competition to, do not meet the criteria for competition. Network companies also sought clarification around whether in the case of a project to which more than one competition model might be applied, each section of the project would need to meet the criteria for competition.
- 9.13 TOs opposed the use of the Competition Proxy Model in RIIO-2. Their key concerns were that it does not involve real competition and that they consider it insufficiently developed to support the allowed financing cost assumptions applied by the model. They also suggested that by only using CPM when the cost of debt under the CPM methodology is lower than the RIIO equivalent would potentially leave TOs underfunded for managing the cost of debt across the portfolio of their assets.

- 9.14 We consider that our Impact Assessment on competition during RIIO-2 , as well as evidence from the OFTO regime and the impact of competition in other sectors, is supportive of our position to continue to consider the application of models of late competition to projects that meet the criteria for competition. This approach allows us to consider the benefits of application of late competition models to individual projects at a time when the project design is appropriately settled.
- 9.15 We accept that CPM is not a competition model and is therefore unlikely to deliver the same level of benefits that the CATO regime or SPV model are likely to deliver. We do not however accept that the model is insufficiently developed. Detail on the model was set out in Appendix 2 of the core document within Draft Determinations. In the context of the licence drafting process, the underpinning licence condition has been discussed and developed with stakeholders through working groups and consulted on. The associated guidance document has been informally consulted on with electricity TOs.
- 9.16 In terms of the impact on the cost of debt applicable to the rest of the price control once CPM is applied to specific projects, we do not share the view of the TOs. The bespoke project-specific risk allocation possible under CPM can contribute to a more efficient cost of financing for a project overall. The efficient cost of financing this project would be recovered by the relevant network company, meaning that it would not leave the relevant company under-funded, and would not impact on the remainder of the network company's portfolio. Additionally, as explained in Chapter 2 of the finance annex of this document, we have considered the cost of debt calibration under both FD ex ante allowances and illustrative re-opener UM cases (Net Zero scenarios). We consider that it would provide a reasonable allowance for expected GD&T debt costs under either case. Therefore, we do not consider CPM being applied to a re-opener project would lead to under-remuneration on debt. Irrespective of this, we intend to consider network company financeability and impacts on the remainder of the price control as part of any project-specific assessment that will inform any decision to apply CPM to a project during RIIO-2.
- 9.17 In terms of concerns raised in responses to Draft Determinations around late competition models delaying infrastructure that is critical to allowing us to meet our Net Zero obligations, we do not consider that this is likely to be the case. Our consideration of whether it is in consumers' interests to apply a model of late competition to the delivery of a specific project will include an assessment of the impact on delivery.

- 9.18 Where there is evidence that shows that the application of a late competition model is likely to lead to a material delay to critical investment and associated additional costs, we will factor this into our decision on whether or not to apply specific models of late competition.
- 9.19 We confirm that where a project meets the criteria for competition, it is possible that different late competition models will be applied to different parts of the project if this is considered to be in the interests of consumers. For the avoidance of doubt, in this situation each part of the project would separately need to meet the criteria for competition. Any part of a project that does not meet the criteria for competition will be funded under the terms of the prevailing RIIO-2 uncertainty mechanism, even if this part of a project does not meet the materiality threshold applied to that mechanism.⁵⁸
- 9.20 Where we consider that it is appropriate to apply the CPM or SPV model to any project brought forward through an uncertainty mechanism during the RIIO-2 period, we will progress the relevant changes to the relevant RIIO-2 licences ahead of finalising the revenue for the project in question. In the case of CPM, this will start from the licence drafting developed and consulted on to date. For the CATO regime we will progress the required licence modifications and drafting once we have clarity on the likely legislative timetable for the required changes to primary legislation needed to implement the model.

Network company development requirements

- 9.21 Network companies should develop projects in a way that avoids creating unnecessary barriers to these projects being delivered efficiently through one of our late competition models.
- 9.22 In Draft Determinations we proposed that Companies must ensure that they do not carry out any development work on eligible UM projects that is detrimental to the application of late competition.
- 9.23 A number of responses from network companies raised concerns that this approach creates uncertainty for TOs with regards to the funding for pre-

⁵⁸ For example, if the majority of a LOTI project is funded through a late model of competition and there is a small part of the project that does not meet the criteria for competition, but falls below the £100m LOTI threshold, it will still be funded under the LOTI mechanism.

construction work on LOTI projects which could lead to these projects not being able to progress in a timely manner due to delays to pre-construction activities.

- 9.24 Having considered these responses, we recognise the importance of clarifying exactly what we meant by our Draft Determinations proposal and how we see the arrangements will work in a way that will not impact on the timely delivery of important investment. Our intention in Draft Determinations was to make clear to network companies that they should develop projects in a way that avoids creating unnecessary barriers to these projects being delivered efficiently through one of our late competition models. Network companies should, for example, seek to ensure relevant planning consents and land rights are capable of being transferred at reasonable cost to third parties, and should progress project works and any regulatory engagement or assessment with Ofgem (for example at Needs Case stages) in a timely and efficient manner.
- 9.25 The majority of projects that meet the criteria for competition and that are going to be delivered during the RIIO-2 period will have pre-construction funding provided in baseline allowances. Companies can use this funding to ensure that the pre-construction work they have identified on each of these projects can progress in a manner that allows these projects to be delivered on time. We do not consider that the arrangements referred to above - to avoid creating unnecessary barriers for delivery through late model competition - would have any material detrimental impact on the timing or cost of those pre-construction works. Companies will have certainty that they are able to progress projects in line with the pre-construction work funded in their baseline allowances.
- 9.26 There may be other projects that meet the criteria for competition that do not have funding arrangements for pre-construction work in place within Final Determinations but may require such work to start during the RIIO-2 period. In the ET sector, these projects are likely to come forward through the LOTI funding mechanism. As set out in the ET Annex of Final Determinations, we have decided that funding decision for pre-construction work on such LOTI projects will be made at the Initial Needs Case assessment stage of these projects. As part of our assessment of the relevant submission for pre-construction funding, we will consider whether any of the proposed pre-construction activities might create barriers to efficient delivery of the project through a late competition model. Where we identify or are made aware by the network company of any such activities, we will consider the justification for these activities along with other relevant considerations. Our funding decision on pre-construction activities, which

would take place early on in the project's development, will provide the TO with certainty on the pre-construction funding for each project to allow them to progress the projects efficiently and in a timely manner.

When we will make our decision on whether to apply a late competition model to projects eligible for UMs

- 9.27 We will aim to reach our decision on whether to apply a model of late competition to the whole or part of a project, as soon as practicable once the relevant project design is sufficiently settled. This is unchanged from our Draft Determination proposal.
- 9.28 We explained that we would normally expect this to be the point at which we are comfortable that the design of the project is unlikely to change. In the electricity transmission sector, for example, this could mean we make a decision to apply late competition in parallel to our Initial Needs Case process for projects that qualify for the LOTI uncertainty mechanism. The latest we expect to make the decision on whether to apply late competition will be the point at which we make our final approval of the network company's proposed design. In the electricity transmission sector, for example, this would mean that the latest we would expect to make our late competition model decision for LOTI projects would be the time at which we assess the Final Needs Case.
- 9.29 TO consultation responses highlighted concerns that a decision as late as the Final Needs Case would create too much uncertainty for the delivery of projects. They emphasised the importance of reaching a decision at the Initial Needs Case assessment stage at the latest.
- 9.30 We recognise the importance of providing certainty for network companies and other affected stakeholders on how and when important infrastructure projects will be delivered. This is why in the case of LOTI projects in the ET sector, wherever possible we intend to make a decision on whether to apply a late competition model at the Initial Needs Case stage. However, it is important to recognise that there will not always be certainty around the final design of a project at the Initial Needs Case stage, which will make it difficult to determine whether the application of a late competition model will be in the interest of consumers or not. In such instances, where network companies consider that there are good reasons why our competition assessment needs to take place before or during early stages of the Final Needs Case assessment, then we will consider these.

9.31 Process diagrams showing how the decision-making process will work in GD/GT and ET are provided below in Figures 8 and 9.

Figure 8: Process map showing overview of our expectation of the decision-making process for application of late competition GT/ GD projects

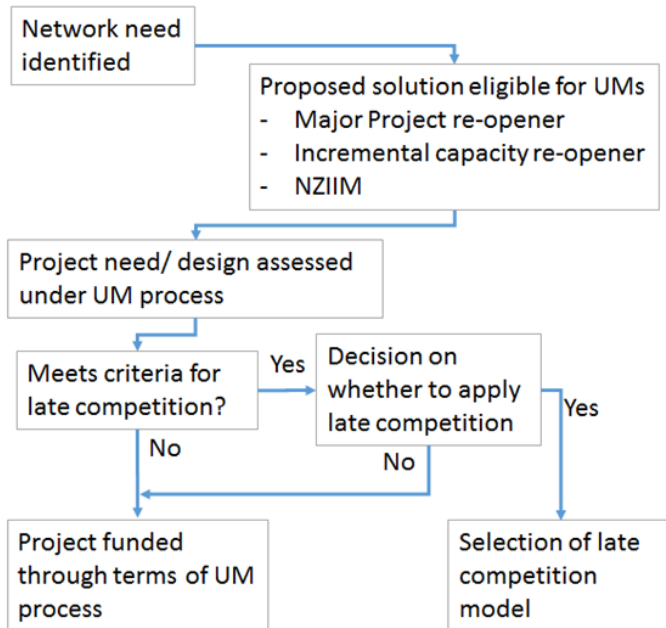
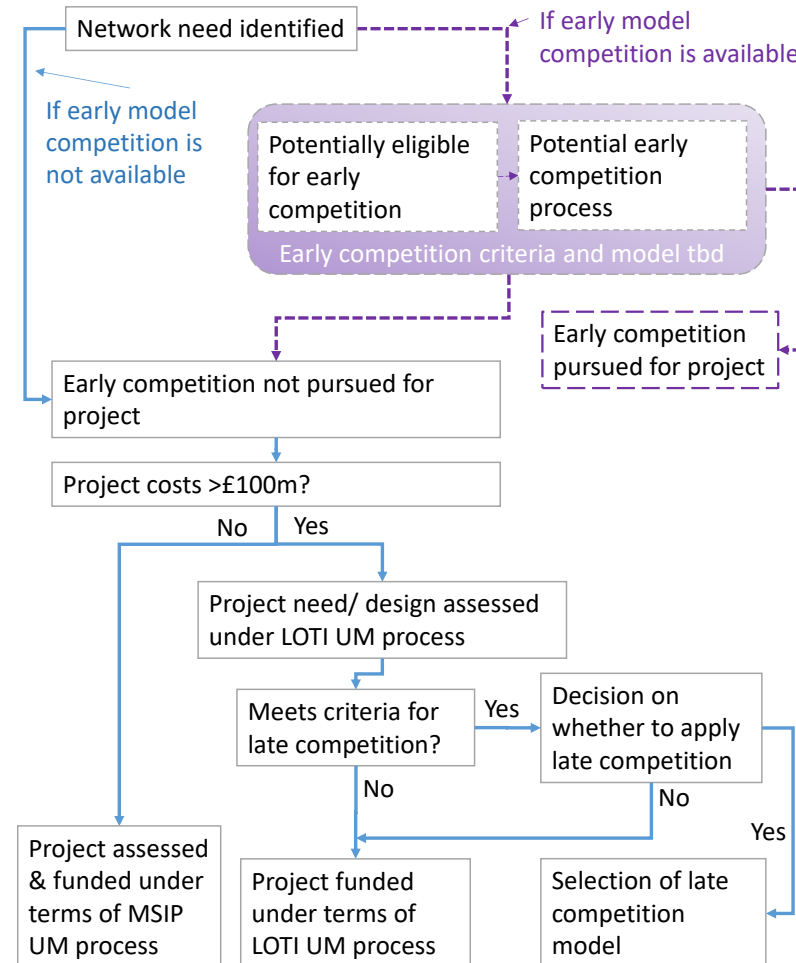


Figure 9: Process map showing overview of our expectation of the decision-making process for application of late competition to ET projects



What will we consider in deciding whether to apply a late competition model to projects eligible for UMs

- 9.32 Our decision on whether a specific project will be funded through one of the late competition models will include consideration of the overarching RIIO-2 Impact Assessment on late competition, including any relevant new information. Our decision will also consider any relevant project-specific factors or circumstances through a project-specific assessment of the consumer impact of applying the competition models.⁵⁹ The impact of our applying any of the late models of competitions on network company financeability will also be considered as part of our decision. This is unchanged from our Draft Determination proposal.
- 9.33 A number of network company responses to Draft Determinations indicated that they considered we should revisit the Impact Assessment previously carried out to determine whether it remained robust to the tightening of returns under the RIIO-2 package.
- 9.34 We consider that the IA remains representative of the potential range of benefits that competition can deliver. In addition, our project-specific consideration and assessment will be carried out to inform our decision on whether to apply a competition model to an individual project during RIIO-2 and will fully capture up-to-date evidence.

Introduction of early competition

- 9.35 In our SSMD, we confirmed that we have decided to continue the development of early competition so that certain projects may be subject to early competition during RIIO-2.
- 9.36 Our SSMD also explained that we would focus on investigating and developing the ESO's ability and capability to facilitate early competition. For this reason, our SSMD requested that the ESO develop an Early Competition Plan (ECP). We initially expect the ECP to cover the electricity transmission sector but have also asked the ESO to provide views on how this could be applied to electricity distribution in RIIO-ED2. In September 2019, we wrote to the ESO in relation to

⁵⁹ [Impact Assessment on applying late competition to future new, separable and high value projects in electricity and gas networks during the RIIO-2 period](#), Ofgem, May 2019.

our expectations for the work. This letter included an indicative timeline to receive a finalised ECP in February 2021.

9.37 In December 2019, the ESO submitted its proposed ECP work plan for delivering its finalised ECP in February 2021. The ESO published the first phase of the ECP in February 2020. In May 2020, it completed stakeholder workshops on a variety of topics, ahead of issuing its phase two consultation in July. The ESO published its phase three consultation earlier this month, ahead of submitting its finalised ECP to us in April 2021.⁶⁰

9.38 We will consider the ECP once it is finalised in 2021 and consult on our views. We will also consider the criteria for identifying system needs or projects potentially suitable for early competition. As and when any potential role for the ESO is defined, we will ensure it is integrated within the price control arrangements for the ESO by adjusting its spending benchmark if necessary and setting clear obligations, expectations and incentives associated with successful delivery.

9.39 Network companies were required to identify each project of £50m or greater in their BPs to allow for consideration of their suitability for an early model of competition.

Final Determination

Early competition	Final Determination	Draft Determination
Application of early model to projects funded in baseline allowances	Projects that receive baseline funding will not be delivered through early competition models.	Same as FD
Application of early model to projects eligible for UMs	We will consult on our views on the ESO's Early Competition Plan Once we have reviewed the final plan in 2021. We will also consult on our views on how early competition may interact with other processes, such as uncertainty mechanisms and the late model competition arrangements.	Same as FD
Criteria for projects suitable for early competition	We will consult on our views on any appropriate criteria for identifying projects suitable for delivery through early competition, including whether or not £50m is an appropriate cost threshold for early competition, once we have reviewed	Same as FD

⁶⁰ <https://www.nationalgrideso.com/future-energy/projects/early-competition-plan/get-involved#updates>

Early competition	Final Determination	Draft Determination
	the ESO finalised Early Competition Plan.	

Final Determination rationale and Draft Determination responses

- 9.40 We have decided to not apply early competition to any projects funded in baseline allowances. This is unchanged from our Draft Determinations proposal.
- 9.41 We received 15 responses explicitly addressing early competition. All these respondents agreed with our proposal to not apply early competition to any projects funded in baseline allowances. A number of them emphasised the difficulty in being able to respond in detail whilst the arrangements were still under development. All TOs identified the level of work still required to develop an early competition model and raised concerns about the uncertainty that would result if early competition was implemented during the RIIO-2 period.
- 9.42 A range of views were expressed on the appropriate criteria for considering the application of early competition for projects. Network companies queried why the cost threshold was so much lower than under late competition, whilst other stakeholders were comfortable with a lower threshold. One network company raised concerns with the appropriateness of the ESO making proposals that will impact on them as a licence holder, outside of Ofgem’s established consultation process.
- 9.43 Key aspects of the early competition policy are still to be developed. We will further develop proposals for how early competition will be incorporated into RIIO-2 once we have reviewed the ESO’s finalised ECP. This is because clarity around the early competition model criteria and the proposed competition arrangements will give us greater certainty around which aspects of the RIIO-2 arrangements are likely to be affected. Our further work will include how early competition interacts with late competition and RIIO-2 uncertainty mechanisms.
- 9.44 We do not share concerns around the ESO making proposals that impact on other licensees. We will consult on our views on the early model of competition, as well as our view on potential benefits to consumers, before making any decisions on the model and ultimately deciding whether any project should be delivered through the early competition model. Therefore, we consider that any early

competition model that is introduced during the RIIO-2 period will have been subject to Ofgem's standard rigorous and robust consultation process.

10. Totex and Business Plan Incentive Mechanisms

10.1 In this Chapter, we set out our decisions on the RIIO-2 Totex Incentive Mechanism (TIM) and the Business Plan Incentive (BPI). This Chapter does not apply to the ESO.

Totex Incentive Mechanism

10.2 The TIM is designed to encourage network companies to improve efficiency in delivery and ensures that the benefits of these efficiencies are shared with consumers. It also provides some protection to companies from overspends, as the costs of overspends are also shared with consumers.

Final Determination

Licensee	Draft Determination	Final Determination
ET – NGET	39%	33%
ET – SPT	39%	49%
ET – SHET	31%	36%
GD – Cadent*	50%	50%
GD – NGN	50%	49%
GD – SGN*	49%	50%
GD – WWU	50%	50%
GT – NGGT	37%	39%

* Based on each network’s incentive rate weighted by Totex.

10.3 As set out in our Draft Determinations, we have applied confidence-dependent incentive rates that would determine the exposure of companies to under- or overspends against baseline Totex allowances. The incentive rates set out in the table above are the effective incentive rates (after paying tax) that will apply to network companies in RIIO-2.

10.4 This confidence-dependent incentive rate is specific to each licensee and has been calculated as follows:

$$\text{Incentive rate (\%)} = [50\% * \text{confidence metric}] + [15\% * (1 - \text{confidence metric})]$$

10.5 The confidence metric for each licensee is 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.

10.6 In line with the approach set out in Draft Determinations, we categorised baseline costs 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 are categorised as "lower confidence" baseline costs.

Final Determination rationale and Draft Determination responses

10.7 We received consultation responses from the licensees and consumer groups about our approach to the TIM and how we proposed to implement it in our Draft Determinations.

10.8 For GDNs, we have decided to set the TIM rate in the range of 49% - 50%, which is broadly in line with our Draft Determinations position. This was supported by one consumer group, who thought that our proposed incentive rates were at a more reasonable level compared to RIIO-1.

10.9 Where GDNs' incentive rates have changed since Draft Determinations, this is because we have changed the proportion of costs assessed through Totex benchmarking versus technical assessment, and because we have rounded incentive rates to the nearest integer value. SGN commented that our process for determining TIM rates was unclear, noting that it should have received a higher rate compared to other GDNs based on the quality of evidence it submitted in the BP. As set out in Chapter 3 of the GD Annex, we have included more of SGN's costs in our regression model at Final Determinations, which has led to an increase in SGN's incentive rate. Where we have classified costs as lower confidence, thereby reducing the incentive rate, we have set out our rationale in company annexes. This is because, as set out in our SSMD,⁶¹ we regard costs derived from our econometric model as high-confidence baseline costs.

⁶¹ Paragraph 11.46, SSMD Core Document Ofgem, May 2019.

- 10.10 For ETOs, we have decided to set the TIM rate in the range of 33-49%. This is an increase on our Draft Determinations position, which was challenged by ETOs predominantly on two grounds.
- 10.11 ETOs argued that certain costs that were classified by us as lower confidence should be classified as high confidence, for example risk and contingency and other costs for which the companies felt that they had provided us with sufficient independent information to persuade us to classify these costs as high confidence. We accepted some of these arguments, for example for risk and contingency costs, as we used an independent method to assess these costs, we classified these as high confidence for our Final Determinations. For certain other costs, we reviewed their previously supplied cost information, taking account of clarification or additional information provided to decide that some of those costs should be classified as high confidence. Details of these are given in Chapter 3 of the company annexes.
- 10.12 For certain projects that were previously exempt from TIM as they had outputs in RIIO-3 and were subject to the cross period funding mechanism, the companies provided RIIO-2 deliverable outputs to which we attached price control deliverables (PCD), and thus decided that they should be subject to TIM. These projects were classified as high confidence as we had been provided with sufficient independent cost information to support this classification.
- 10.13 For NGGT, the only substantive consultation response was from NGGT itself, who argued that we had incorrectly excluded costs subject to an UM and applied our TIM calculation inconsistently with the other TOs. We disagree with both of NGGT's concerns. However, we have updated our calculations based on our FD allowances and views of confidence and we have decided to set the NGGT TIM rate at 39%. Our rationale for this decision is detailed in Chapter 6 of the NGGT Annex.
- 10.14 We received comments from TOs on both the TIM and the BPI that our approach to cost confidence assessments unduly favours econometric evidence, and therefore unfairly disadvantages TOs compared to GDNs. We address this point in the BPI section below.

The Business Plan Incentive

10.15 The BPI was developed to encourage network companies to submit ambitious Business Plans that contain the information Ofgem required to undertake a robust assessment of the Business Plans.

10.16 The purpose of the BPI is to drive benefits for consumers by rewarding companies for BPs that offer consumers additional benefits and value for money. The mechanism was designed to encourage this. Where companies submitted Business Plans that failed to meet minimum requirements, they would incur a penalty. In assessing the content of BPs there was scope for rewards in respect of high-confidence costs, and penalties in respect of poorly justified low-confidence costs.

10.17 In this Chapter, we provide an overview of our BPI decisions for each company and set out some of the key points raised by stakeholders on the BPI and our responses to those points. Further details on our BPI decisions for each company are set out in Company Annexes.

Final Determination: Overall BPI

Licensee	Stage 1	Stage 2	Stage 3	Stage 4	Applicable cap/collar (+/- 2% Totex)	Total Reward/Penalty
ET – NGET	-£26.9m	£0	-£37.3m	£0	£107.5m	-£64.1m
ET – SPT	No penalty	£2.1m	£0m	£2.9m	£24.5m	£5.0m
ET – SHET	No penalty	£10.5m	-£4.5m	£15.8m	£43.2m	£21.8m
GD – Cadent	No penalty	£0.7m	-£0.1m	£0m	£92.4m	£0.6m
GD – NGN	No penalty	£0m	-£3.0m	£5.1m	£23.5m	£2.1m
GD – SGN	No penalty	£0m	£0m	£0m	£52.8m	£0m
GD – WWU	No penalty	£0m	£0m	£0m	£23.1m	£0m
GT – NGGT	-£8.7m	£0m	-£13.0m	£0m	£40.2m	-£21.7m

Final Determination and Draft Determination responses: Overall BPI

10.18 We have adopted the approach set out in our SSMD and Draft Determinations to determine the outcome of our BPI assessment across all four stages.

- Stage 1: We decided to implement our Draft Determinations position that NGET and NGGT have failed to meet the minimum requirements set out in our Business Plan Guidance (BPG), and therefore have failed against Stage 1 of the BPI. All other licensees have passed Stage 1
- Stage 2: We have reviewed our assessment of Consumer Value Propositions (CVPs) submitted by licensees to take account of feedback received to our Draft Determinations. As a result, we have made some changes to the number and value of accepted CVPs. In line with the design of the BPI, as set out in our SSMD and in our Draft Determinations, NGET and NGGT are not eligible for CVP rewards due to their failure in Stage 1
- Stage 3: In line with the approach set out in SSMD and Draft Determinations, we have applied a penalty of 10% to all poorly justified lower confidence costs removed by Ofgem. Since our Draft Determinations, there has been a reduction in costs liable for Stage 3 penalties due to an increase in accepted costs and changes to our assessed value of lower confidence costs
- Stage 4: While we have retained the high-level approach set out in SSMD and Draft Determinations, we have changed the level of aggregation at which Stage 4 rewards are calculated. This has led to an increase in Stage 4 rewards compared to our Draft Determinations position.

10.19 Further details of the outcome of the BPI for each licensee are set out in the Company Annexes.

10.20 The rest of this Chapter sets out the main points raised by stakeholders on the BPI and our responses to those points.

Development of the BPI framework

10.21 Some consultation responses stated that there were significant changes in the BPI framework from SSMC to SSMD and companies were not consulted on these ahead of the Draft Determinations.

10.22 The changes made between the SSMC and SSMD reflect feedback we received from stakeholders in response to the SSMC. The decision on the framework reached at SSMD included the same fundamental features that were consulted on at the SSMC stage, with refinements at the SSMD decision stage based on feedback received through the consultation process. In particular, the following key aspects of the BPI were consulted on in the SSMC and were included in the design of the mechanism decided at SSMD:

- a framework for rewards and penalties based on a qualitative assessment of Business Plans and an assessment of proposed costs with reference to Ofgem's view of efficient costs
- an incentive range of +/- 2% of totex (with greater upside potential, as we chose not to proceed with the proposal that rewards should be shared between eligible companies
- an assessment of whether Business Plans met an obligatory set of minimum requirements.

Business Plan Guidance

- 10.23 BPG was published and shared with licensees to assist them in preparing their business plans.
- 10.24 Some consultation responses from licensees stated that there was a lack of clarity over the assessment criteria for Stage 1 and Stage 2 of the BPI due to the timing and number of iterations of the published BPG. They stated that this caused the unintended shortcomings in performance against the BPG.
- 10.25 We published an initial version of the BPG in September 2018 and sought views from stakeholders on an iteration in December 2018, shortly after publication of the SSMC. The version of the BPG that was published in June 2019 reflected our consideration of consultation responses along with any refinements to the policy positions that occurred between the SSMC and the SSMD. We published further updates to the BPG in September 2019 and October 2019 reflecting refinements to the policy positions following further engagement with stakeholders after the SSMD.
- 10.26 Whilst we accept that it would have been preferable to have had fewer iterations of the BPG, it is not unusual for guidance documents to be revised, where doing so improves the clarity of guidance. The BPG was amended to provide further clarity for companies and to reflect the necessary changes that had emerged from different stages of consultation. It was also a new process, so it was important that it was amended to reflect stakeholder feedback.
- 10.27 On Stage 1, the BPG included a list of minimum requirements. We said clearly that failure to meet these minimum requirements would lead to a Stage 1 failure and penalty. None of the assessed failures of Minimum Requirements set out in our

Draft Determination proposals or our Final Determinations relates to changes that were made to the BPG in the September 2019 or October 2019 updates.

10.28 On Stage 2 CVPs, we included guidance to licensees in the BPG. The guidance included illustrative examples of types of activities that might be included in a CVP and set out a non-exhaustive list of matters we would consider in assessing the CVPs. All companies received the same guidance on CVPs and therefore had the same opportunity for reward. We assessed companies' CVPs on their merits and have decided to provide rewards accordingly.

Proportionality of BPI penalties

10.29 Some consultation responses to the Draft Determinations suggested that the proposed BPI penalties and the cap of 2% of allowed totex are disproportionately high and do not reflect the harm that might have been caused by gaps and weaknesses in the business plans.

10.30 As part of the development of the BPI, we considered the proportionality of the overall cap of 2% of allowed totex for rewards and penalties as well as the proportionality of penalties that could be applied under Stage 1 and Stage 3 of the BPI.

10.31 In our SSMC, we consulted on setting a cap of 2% of totex for overall rewards and penalties. We said that "we consider that a reward/penalty for the incentive should be within the range of $\pm 2\%$ of totex equivalent. This is roughly equivalent to a 7% under or overspend. We believe that rewards/penalties above the proposed level of $\pm 2\%$ of totex equivalent may outweigh incentives on delivery of efficient costs."⁶²

10.32 In our subsequent SSMD, we decided to impose a cap of $\pm 2\%$ on of totex and set out our reasons for doing so. We said that "views on the strength of the incentive were mixed with some respondents indicating that the proposed 2% level was not sufficiently strong and others stating that it appears reasonable." We went on to say that "we believe that by retaining a cap on net reward and penalties under the BPI of set at a level of $\pm 2\%$ of allowed totex is reasonable and will provide a sufficiently powerful incentive [to submit high quality business plans]".⁶³

⁶² Paragraph 9.14, SSMC, Ofgem, May 2019.

⁶³ Paragraph 11.71, SSMD, Ofgem, May 2019.

10.33 We believe that a high-quality Business Plan is a crucial element of the price control process, which gives us the information we need to set a price control that delivers outputs for consumers at a reasonable cost. Poor or incomplete business plans can be a serious impediment to achieving that objective. Consumers are well served by businesses being incentivised to provide full and accurate information in their Business Plans. We therefore think that a penalty capped at 2% of totex, which is broadly equivalent to a 7% overspend against allowances, is a reasonable deterrent against submitting poor quality and incomplete business plans.

10.34 In relation to the penalty of 0.5% of totex for a Stage 1 failure, we said at SSMD that "We believe that a penalty of 0.5% of totex for Stage 1 of the assessment will provide a sufficient incentive for companies to apply the necessary effort to provide us with a plan that is of an acceptable standard. We believe that all companies should be able to meet the minimum requirements, thereby avoiding a penalty at Stage 1 and becoming eligible for a reward under other elements of the BPI."⁶⁴

10.35 We further considered the appropriate level of the Stage 1 penalty in the context of the overall cap for rewards and penalties of 2% of totex. We concluded that it is reasonable for the Stage 1 penalty to be set at a level equal to one quarter of the total capped penalties, to reflect a reasonable weight for Stage 1 within the overall BPI.

10.36 In relation to Stage 3 penalties, we concluded in the SSMD that the rate of 10% will provide a sufficient penalty for the purpose of discouraging poorly justified costs where we have little independent information available to set allowances.

BPI framework design

10.37 Some respondents argued that it is unreasonable for us to exclude licensees that fail Stage 1 from rewards under Stages 2 and 4 of the BPI. This feature of the BPI has been described by some respondents who argued that disqualification from the rewards at Stages 2 and 4 is a 'double penalty' that further penalises the same perceived failure. Respondents also argued that it is also not in consumers' interests to prevent consumers from benefitting from the CVP proposed at Stage 2 simply because of a failure at Stage 1.

⁶⁴ Paragraph 11.69, SSMD, Ofgem, May 2019.

10.38 We do not agree that this feature of the BPI imposes a “double penalty” or that it leads to consumer detriment. Indeed, we do not agree that the exclusion from Stage 2 and Stage 4 rewards can be described as a penalty at all. It is more accurately seen as a loss of opportunity to earn rewards that might offset penalties received through Stage 1 (and potentially Stage 3). In no circumstances would the overall BPI penalty be higher than the sum of penalties received under Stages 1 and 3, and that in turn is capped at 2% of totex. The rewards and penalties were capped in this way to provide a limit to the impact of the mechanism on consumers and licensees.

10.39 Whilst a failure at Stage 1 prevents the licensees from benefiting from Stages 2 or 4 of the mechanism, we nevertheless assessed all CVP proposals, including in respect of licensees that failed Stage 1. Indeed, NGET and NGGT have one CVP each that we might have accepted had they not been assessed as failing Stage 1. Both of these CVPs relate to delivering enhanced environmental benefits through improvements to “non-operational” land owned by these TOs. We recognise the value of these activities for consumers, and we have incentivised these through a separate financial ODI (the environmental scorecard), which was also proposed by both NGET and NGGT as a bespoke ODI that we have accepted. Consequently, we do not think that the lack of a financial reward for the idea through the CVP causes any consumer detriment.

10.40 Some respondents argued that Stages 1 and 3 target the same perceived failings in the Business Plans, therefore leading to a disproportionate double penalty for the same failures.

10.41 Whilst we accept that there is some necessary overlap between Stages 1 and 3 of the BPI, there is a clear distinction:

- Stage 1 assesses the completeness of information in the Business Plan which is crucial to our ability to carry out a robust assessment
- Stage 3 assesses the quality of justification provided for cost forecasts included in the Business Plan.

10.42 The absence of information to support cost forecasts could therefore lead to failure against minimum requirements under Stage 1 and also to penalties under Stage 3 if those costs are assessed as poorly justified lower confidence costs and are removed by Ofgem. While that is the case, we do not think that this alone indicates a flaw in the BPI or that a penalty at each stage is disproportionate. It is

not unusual within the price control for the same failure to attract incentive penalties under different mechanisms (e.g. poor internal processes could lead to penalties under multiple incentive schemes), just as it is not unusual for the same action to receive incentive rewards under different schemes (e.g. innovative and cheaper asset management solutions could potentially benefit licensees under the TIM as well as the NARM). In any event, through the provision of further information after the Business Plan submission deadline, it is possible for a licensee to remedy an absence of information for the purposes of Stage 3 assessment if that new information leads to a reduction in the amount of poorly justified lower confidence costs removed from the Business Plan forecast.

10.43 In recognition of the interactions between the different Stages of the BPI, we put in place an aggregate cap on rewards or penalties across all four Stages of the BPI so that the overall outcome remains fair and proportionate (as set out above).

10.44 Some respondents highlighted the apparent imbalance between rewards and penalties in our Draft Determinations. In particular they pointed to the fact that the proposed penalties were significantly higher than the proposed rewards. They argued that this indicated a flaw in the BPI design.

10.45 We do not agree that the size of assessed rewards and penalties under the BPI means that the BPI is inherently biased towards penalties. Indeed, we believe that the BPI is a fairly balanced mechanism, offering rewards for companies that submit high quality ambitious plans that benefit consumers, and penalties for lower quality and poorly justified plans.

10.46 We believe that licensees could avoid penalties under Stage 1 by submitting Business Plans that meet the Minimum Requirements. In our SSMD, we said that we expected all licensees to pass Stage 1. We think the fact that all licensees except the two NG licensees have passed Stage 1 suggests that it was a reasonable expectation.

10.47 Licensees could avoid Stage 3 penalties in two ways. They could have submitted information that helped us have high confidence in their cost forecasts, and they could have submitted good justifications for their cost forecasts even if they were lower confidence costs. Stage 3 penalties are only applied where these two tests have not been met. The outcome of our assessment suggests that, with the exception of the two NG licensees, all licensees have attracted relatively small penalties under Stage 3.

- 10.48 Licensees could have earned rewards under Stage 4 for high confidence costs by submitting ambitious cost forecasts that beat our benchmarks. As the outcome of this assessment shows, two of the three ETOs and one GDN have earned rewards in this way.
- 10.49 Some respondents said that the BPI is inherently biased against transmission licensees compared to GDNs due to the application of our cost confidence assessment to the BPI. They argued that our approach favours econometric evidence, which is used for a higher proportion of costs in the GD sector compared to the transmission sectors, over other methods of demonstrating cost efficiency.
- 10.50 We recognised this potential feature of the BPI in our Draft Determination. However, we also said that our BPG set out a number of ways in which companies could support their cost forecasts to provide us with high confidence. We continue to believe that our approach provides licensees in all three sectors with opportunities to earn rewards through Stage 4 through submitting high-quality information. The outcome of the BPI assessment as set out in this Final Determinations decision supports our position.
- 10.51 We received feedback from one TO that the design of the overall caps for BPI rewards and penalties, which we set at SSMD to be 2% of allowed baseline totex, could lead to 'perverse' outcomes. It was pointed out that a company could, under some circumstances, receive higher baseline allowances in Final Determinations compared to Draft Determination at the same time as receiving higher penalties under the BPI due to the corresponding increase in the cap.
- 10.52 We believe that we have good reasons, as set out in our SSMC and SSMD, for capping rewards and penalties under the BPI by reference to totex allowances. The maximum applicable BPI penalty increases with increases in allowed totex, which we believe to be a reasonable proxy for the extent of consumer harm that could arise from poorly justified costs in Business Plans. This feature also means that the cap is larger for larger companies (determined by totex), e.g. the cap for NGET is higher than it is for SPT.
- 10.53 We do not think it is appropriate to make comparisons between caps in Draft Determination (which were based on provisional allowances) and the caps at Final Determinations. Even if that were done, the increase in the cap from Draft Determination to Final Determinations does not suggest a perverse outcome. We believe that it is reasonable and proportionate to link the overall cap on BPI

rewards and penalties to totex allowances. The cap at Draft Determinations represented an appropriate level of maximum penalty relative to the totex that we were minded to allow at the time. As that allowed totex increased, the appropriate maximum penalty increased with it.

Final Determination: Stage 1 BPI

Licensee	Draft Determination	Final Determination
ET – NGET	Fail, with penalty of £16.7m	Fail, with penalty of £26.9m
ET – SPT	Pass	Pass
ET – SHET	Pass	Pass
GD – Cadent	Pass	Pass
GD – NGN	Pass	Pass
GD – SGN	Pass	Pass
GD – WWU	Pass	Pass
GT - NGGT	Fail, with a penalty of £7.8m	Fail, with a penalty of £8.7m

Final Determination and Draft Determination responses: Stage 1 BPI

10.54 We have decided to implement our Draft Determinations position for the GDNs that all of them have passed Stage 1 of the BPI. This was mostly supported by the consultation responses, with the exception of one licensee who disagreed with our proposed outcome for Cadent and NGN.

10.55 In our Draft Determinations, we explained that, upon the initial assessment of the Business Plans, Cadent and NGN did not meet some of the minimum requirements we set out in our SSMD. Following a review of materiality of the minimum requirements that Cadent and NGN were assessed to have not met, we considered that they did not fail Stage 1 due to lack of materiality of those minimum requirements. We have not received substantive evidence to support a different conclusion, and we remain satisfied that the application of a materiality threshold in our assessment remains appropriate and justified for the reasons set out in our Draft Determinations, and as explained further below.

- 10.56 We have decided to implement our Draft Determinations position for SPT and SHET that they have passed Stage 1 of the BPI. This was supported by the consultation responses.
- 10.57 We have decided to implement our Draft Determinations position for NGGT and NGET that they have both failed Stage 1 of the BPI. Both NGGT and NGET will therefore receive a penalty under Stage 1 of the BPI of 0.5% of their allowed totex.
- 10.58 Both NGET and NGGT failed to meet multiple Minimum Requirements across their respective Business Plans. These were not isolated errors, but systemic failings in relation to the content of both Business Plans. The lack of detail and justification shown in their Business Plans for high value expenditure areas has undermined our confidence in the Business Plans. These failings had a material impact on our ability to assess their Business Plans in a timely and robust manner. Significant resource needed to be dedicated to resolving the multiple issues with both plans, including through supplementary questions and significant amounts of bilateral engagement.
- 10.59 We therefore maintain our view that these failures to meet the Minimum Requirements are sufficiently serious and material to warrant failure against BPI Stage 1. Further details of NGET and NGGT's failings are set out in the respective company annexes.
- 10.60 Both NGET and NGGT disagreed with our provisional assessment under Stage 1 of the BPI and set out a number of criticisms of the design of Stage 1 and our assessment of their business plans against the minimum requirements. We set out our responses to the design aspects here. Our responses to points made about the individual company assessment are set out in the respective company annexes.
- 10.61 Both NGET and NGGT argued that the application of a materiality test as part of our assessment under Stage 1 of the BPI unfairly disadvantages and penalises transmission licensees. They point out that a materiality test was not explicitly included within the Stage 1 approach as set out at SSMD and was only introduced in Draft Determination. Furthermore, they argued that even if we were to retain the view that their business plans did not meet certain Minimum Requirements, the failures are not sufficiently material to incur a Stage 1 penalty.

10.62 In our Draft Determination, we set out our reasons for provisionally concluding that two GDNs (Cadent and NGN) had passed Stage 1 of the BPI even though they were assessed to have not met one Minimum Requirement each. We said that the specific Minimum Requirements that had not been met had a low materiality for consumers in terms of cost allowances sought, and that we were able to obtain and understand the information that had originally been omitted by these companies through a simple supplementary question, and that the omission did not have a material impact on our Business Plan assessment. At Draft Determination, we therefore proposed not to fail Cadent or NGN.

10.63 In contrast, as set out above, we think NGET's and NGGT's failures against the Minimum Requirements are material, significant and widespread.

10.64 For NGET, the most material failures against Minimum Requirements relate to the quality of the Engineering Submission included within its business plan. In our Draft Determinations and subsequent bilateral engagements, we provided detailed explanations for the failures relating to the three most significant Engineering Justification Papers (representing forecast costs in excess of £1.3 billion). However, there are broader failures across the entire NLRE submission (representing forecast costs of £2.6 billion).

10.65 For NGGT, the failures relate to information supporting the forecasts of work volumes for Asset Health included within the business plan. Asset Health expenditure represents around £616 million in forecast costs and represents a third of NGGT's overall forecast expenditure. Additional failures have been identified in relation compressor decommissioning costs, but these are less material in terms of value (around £10 million).

10.66 Further information on these failures are set out in the respective company annexes.

10.67 Both NGET and NGGT said that Ofgem failed to act transparently and proportionately by not providing early feedback on the quality of their draft business plans. They also said that Ofgem ignored the views of the User Groups on the quality of the business plans.

10.68 We disagree with these suggestions. All transmission and gas distribution licensees submitted draft business plans to the independent RIIO-2 Challenge Group in July 2019 and October 2019, ahead of their submissions to Ofgem in

December 2019. The purpose of these submissions was to allow the Challenge Group to review the draft business plans and provide their independent views to Ofgem to support our assessment of the final business plans. As such, it was not appropriate for Ofgem formally to express a view on the quality and completeness of the draft business plans at that stage in the process.

10.69 We accept that the User Group reports for NGET and NGGT say that the quality of justification provided in the respective business plans are “generally good”. However, we also note that the independent RIIO-2 Challenge Group (‘CG’) raised a number of concerns about gaps in both NGET and NGGT draft business plans. NGET’s plan received several ‘Red’ ratings, especially in relation to cost justifications. The report from the CG said that “we have a low level of confidence in the justification for NGET costs especially non load related and non-operational Capex expenditure”. The CG also raised concerns about “the robustness of NGGT’s plan” and highlighted the risk that costs are overstated. Concerns were also raised directly with NG by Ofgem staff at an operational level in meetings

10.70 We believe that NGET and NGGT had received adequate feedback on the quality of their business plans from the CG. The independent Challenge Group reports were also published and consulted upon. NGET and NGGT therefore had ample opportunity to engage with such feedback and address any shortcomings or gaps before submitting the final business plans to Ofgem.

Final Determination: Stage 2 BPI Assessment

Licensee	Draft Determination	Final Determination
ET – NGET	£0m	£0m
ET – SPT	£1.6m	£2.1m (1 CVP)
ET – SHET	£0m ⁶⁵ (1 CVP)	£10.5m (2 CVPs)
GD – Cadent	£0m	£0.7m (1 CVP)
GD – NGN	£1.6m	£0m
GD – SGN	£0m	£0m
GD – WWU	£0m	£0m
GT – NGGT	£0m	£0m

⁶⁵ In our Draft Determinations, we proposed to accept one CVP for SHET. However, we consulted on a revised methodology for the calculation of the CVP value. See the RIIO-2 [Draft Determinations SHET Annex](#) paragraphs 2.17 to 2.23.

Final Determination and Draft Determination responses: Stage 2 BPI

CVP framework and assessment

- 10.71 We have decided to accept four CVPs across Transmission and Gas Distribution. This is a change from our Draft Determinations position and reflects the responses and additional information received in response to Draft Determination. The rationale for our decisions on individual CVPs is set out in the Company Annexes. Below we address points raised by consultation responses about the CVP framework and our assessment.
- 10.72 We acknowledge that we have accepted only a small number of the network companies' CVP proposals; however, we disagree with Draft Determination responses that argued that this indicates a failure of policy intent. Our view is that the CVP proposals were generally not of sufficiently high quality, were not clearly justified and were rejected following a robust assessment.
- 10.73 We recognise that ambition and quality are subjective characteristics that can be difficult accurately to quantify and therefore to reward. The CVP framework is intended to reward specific proposals and activities that go beyond BAU and demonstrate additional consumer value. As consumers ultimately fund any reward, we must be satisfied the proposals provide clear additional value to consumers,⁶⁶ and we consider our assessment and rationale for rejecting CVP proposals to be justified and proportionate.
- 10.74 We note that the RIIO-2 CG supported our Draft Determination position to reject the majority of CVP proposals, whilst some network companies argued that we seemed to have disregarded the views of the Groups by rejecting CVP proposals they supported. In light of the Draft Determinations responses, we reconsidered CVPs highlighted by the Enhanced Engagement groups or network companies that had clear Groups support and further to this consideration, accepted two further CVPs. Feedback from the Groups was one of a number of relevant considerations that informed our decisions on CVPs. Some proposals that were supported by the Groups were rejected where we did not consider the proposals were justified and did not meet the CVP assessment criteria set out in the BPG.
- 10.75 Some network companies suggested that there was a lack of consistency in CVP assessment between sectors, especially around biodiversity and community

⁶⁶ Paragraph 5.3, [RIIO-2 Business Plan Guidance](#), Ofgem, October 2019.

initiatives. We are satisfied that the biodiversity-related CVPs accepted in Transmission, which relate to improving biodiversity in areas impacted by construction and at network-owned sites, are materially different to those we rejected in Gas Distribution, which relate to third-party tree planting schemes and community engagement. We stated in our SSMD that we expect high quality engagement to be BAU in RIIO-2, and we consider the proposed tree-planting activities to fall under Corporate Social Responsibility (CSR). However, we agree with a GDN that NGGT's Community Initiatives CVP should also be considered CSR and we have now rejected that proposal at Final Determinations. In light of further evidence provided by other GDNs, we also agree that the NGN CVP proposal that we proposed to accept at Draft Determinations does not go beyond BAU for the sector and have now rejected this CVP. For our Final Determinations rationale for rejecting CVPs, see the Company Annexes.

10.76 We disagree with the network companies that suggested there was a lack of transparency in the assessment of CVPs. We undertook a consistent assessment of the proposed CVPs against the criteria set out in the Business Plan Guidance.⁶⁷

10.77 We did not consider it appropriate to set a common methodology for quantifying consumer value due to the diversity of proposals and the different ways these proposals create value. We acknowledge there had to be an element of subjectivity when assessing some proposals, however we endeavoured to minimise this by assessing against a robust assessment framework and consider our assessment proportionate and applied consistently.

Treatment of CVP rewards during the control

Clawback

10.78 We are including a clawback mechanism to clawback CVP rewards in the event that a network company does not deliver some or all of the agreed CVP output in RIIO-2. Network companies, the Groups, a consumer group and an environmental stakeholder were all supportive of the principle of clawing back rewards for non-delivery; however, they also raised general concerns around the design of the clawback mechanism, CVP reporting and our assessment of performance to determine delivery. We agree with the Draft Determination responses that argued

⁶⁷ [RIIO-2 Business Plan Guidance Oct 2019](#) paragraph 5.5

it is appropriate that network companies are only rewarded for what they deliver within the price control period.

10.79 Due to the diverse nature of the accepted CVPs we have not introduced a common methodology to assess clawback. We have instead decided on adopting the clawback principles below that take account of concerns raised by stakeholders in the Draft Determination responses. For details of the bespoke clawback mechanisms that will apply to accepted CVPs, see Chapter 6 in the Company Annexes.

10.80 We will assess whether a CVP output has been delivered as part of RIIO-2 close-out. Network companies will submit a CVP Report to Ofgem at the end of RIIO-2 detailing how they have delivered their accepted CVP outputs (where applicable). We acknowledge the responses of a number of network companies requesting clarity around any ex post performance review and we will provide guidance ahead of RIIO-2 close-out following engagement with the network companies.

10.81 The amount of money clawed back if the CVP output is not fully delivered will be limited to the value of the CVP reward, and we will not clawback any allowance for the associated costs of delivering the CVP, unless these are already separately covered by an associated PCD. We agree with one of the Groups that said that in the event of partial or non-delivery of a CVP, network companies should not end up worse off than if they had not proposed the CVP in the first place and this will not be the case.

10.82 If the CVP output is not fully delivered, we will only clawback the amount of CVP reward proportionate to any element of that output that was not delivered. All accepted CVPs have clearly defined outputs and KPIs, with quantitative metrics for assessing the proportion of CVP delivery. Chapter 6 in the Company Annexes details the bespoke methodologies for clawing back all or part of the reward for CVPs that are not fully delivered.

10.83 We disagree with a User Group that network companies should be rewarded for ambition even if the proposals eventually fail to be delivered. If no additional value is provided for consumers due to non-delivery of the CVP, we do not consider it appropriate that either companies are rewarded or that consumers should pay for this and we will clawback the reward.

10.84 We agree with a User Group that if a rewarded activity becomes a statutory requirement during the price control then network companies should not continue to be rewarded as the work would become BAU. If this is the case, we will look to clawback the proportion of the reward that correlates with the period of the price control that the legislation is in place. However, we disagree with the User Group that we should clawback the entirety of the reward if the activity becomes expected as BAU during RIIO-2. We made our decision that the CVP goes beyond BAU at the beginning of the price control period based on the information currently available to us. We do, however, expect CVPs rewarded in RIIO-2 to become BAU in RIIO-3.

CVP reporting

10.85 At Final Determinations we have decided that there should be no requirement for annual regulatory reporting of CVP performance. This is a change to our Draft Determination position where we consulted on providing a common reporting template and updating the RIGs.

10.86 There were conflicting views from network companies in the Draft Determination responses, with some stressing the importance of detailed annual reporting and others warning against excessive regulatory burden. We have decided that as our assessment of performance is solely based on an ex post review, and given the number of CVPs accepted, there is likely to be limited benefit from annual reporting to Ofgem. However, we expect companies to report their progress of delivering CVPs to their stakeholders through the annual company reports.

Alternative CVP delivery

10.87 We expect networks to deliver the CVP outputs as set by Ofgem in Final Determinations and will not accept any alternative or equivalent delivery of CVP outputs. Some network companies requested that KPIs be adapted if a superior alternative output is found or if stakeholders' needs change. Given the number of accepted CVPs, the size of the rewards, the shorter price control period and the clear definition of all of the CVP outputs, we consider it unnecessary to introduce the complexity that would be created if were to allow substitution, alternative or equivalent delivery. We also note that the allowed CVPs ought to be fit for purpose as they were developed by stakeholders and the Groups and have been assessed and decided by Ofgem.

Final Determination: Stage 3 BPI

10.88 The outcome of our assessment under Stage 3 of the BPI is set out in the table below.

Licensee	Draft Determination	Final Determination
ET – NGET	-£179.6m	-£37.3m
ET – SPT	-£16.6m	£0m
ET – SHET	-£47.3m	-£4.5m
GD – Cadent	-£0.1m	-£0.1m
GD – NGN	£0m	-£3.0m
GD – SGN	-£1.1m	£0m
GD – WWU	£0m	£0m
GT – NGGT	-£18.6m	-£13.0m

Final Determination and Draft Determination responses: Stage 3 BPI

10.89 In this section we set out our decision on the approach to determining the outcome of Stage 3 of the BPI and feedback received from stakeholders on our approach as set out in Draft Determinations. Further details of how our approach has been applied to each company is set out in the respective company annexes.

10.90 In our Draft Determinations, we described the methodology that we used to determine Stage 3 penalties for lower confidence costs removed by Ofgem in consequence of the submitted cost figure being poorly justified. At the SSMD, we decided that we would apply a penalty of 10% of the value of any lower confidence costs that are removed by Ofgem from company Business Plans. We reiterated our approach in Draft Determinations, where we said that the “amount of lower confidence costs removed by Ofgem from Business Plans is the difference between company costs forecasts in the final Business Plan submissions and our efficient baseline allowances”, and that we would apply the Stage 3 penalty to the “lower confidence costs removed by Ofgem from Business Plans”, on the basis that the submitted cost figures “were poorly justified by companies”. We have decided to adopt this approach for Final Determination.

10.91 Following our Draft Determinations, we have updated our assessment of totex allowances to take account of feedback and new information provided by the companies through responses to SQs and in their Draft Determinations responses. In general, this has reduced the overall value of lower confidence costs removed from company forecasts, which in turn has reduced the value of penalties applied

under Stage 3. Further details of how we have assessed efficient baseline cost allowances are set out in the sector and company-specific annexes.

10.92 In the rest of this section, we discuss the consultation responses we received relating to our approach to Stage 3. We also received a number of comments from licensees on the way we have implemented Stage 3 in relation to particular costs. We discuss these in the relevant company annexes.

10.93 NGET said that Ofgem's approach to cost assessment involves "reducing all above-mean company costs to Ofgem's view of an efficient sector mean". This means that allowances for all companies in the sector "end up lower than Ofgem's efficient sector mean". The respondent said that "this cost assessment method is unsound and is no basis to justify applying a further 10% penalty to disallowed costs."

10.94 The respondent is correct to point out that, in setting baseline allowances in electricity transmission, we have used the lower of the company forecast and our unit cost benchmark (where such benchmarks are available). We do not think this approach to cost assessment is unsound in any way, as it would not be in the interests of consumers to set allowances that are higher than the companies' own forecasts of efficient costs. It is worth noting in this context that Stage 4 of the BPI offered rewards to companies that submitted cost forecasts that are lower than Ofgem's benchmark, but this applies only to high confidence costs.

10.95 NGET and NGGT said that "Ofgem's approach appears to have been to apply a 10% penalty under Stage 3 of the BPI to all "lower-confidence" costs it proposes to remove from our baseline, without clearly carrying out a separate assessment of whether those costs were "poorly justified" or instead disallowed for other reasons." Furthermore, NGET said that Ofgem did not provide a "line-by-line assessment" of the costs to which the Stage 3 penalty has been applied.

10.96 We disagree with the suggestion above that that approach deliberately applied penalties under Stage 3 to all lower confidence costs removed from company forecasts. We can confirm that Stage 3 penalties were only applied to poorly justified lower confidence costs that were removed from NGET's and NGGT's forecasts. It is possible for lower confidence costs to be removed by Ofgem for reasons other than poor justification, eg because they have been moved into an Uncertainty Mechanism. In such cases, the Stage 3 penalty would not apply. Please see discussions on the application of BPI Stage 3 in the respective company

annexes for examples where we have excluded certain costs from the scope of penalties due to the high levels of uncertainty surrounding those cost forecasts.

Final Determination: Stage 4 BPI

10.97 The outcome of our assessment under Stage 4 of the BPI is set out in the table below.

Licensee	Draft Determination	Final Determination
ET - NGET	£0m	£0m
ET - SPT	£0m	£2.9m
ET - SHET	£0m	£15.8m
GD - Cadent	£0m	£0m
GD - NGN	£0m	£5.9m
GD - SGN	£0m	£0m
GD - WWU	£0m	£0m
GT - NGGT	£0m	£0m

Final Determination and Draft Determination responses: Stage 4 BPI

10.98 In this section we set out our decision on the approach to determining the outcome of Stage 4 of the BPI and feedback received from stakeholders on our approach as set out in Draft Determination. Further details of how our approach has been applied to each company is set out in the respective company annexes.

10.99 In our SSMD, we said that companies could earn Stage 4 rewards for high-confidence costs by submitting cost forecasts in their Business Plans that are lower than a benchmark that we would otherwise have used in setting the allowance. As part of our Draft Determination, we set out our view of baseline allowances drawing on efficient cost benchmarks that we have developed through our cost assessment. Further details of how we have determined our view of efficient cost benchmarks are set out in the sector and company-specific annexes.

10.100 For the purposes of Stage 4, we said that we compared our efficient cost benchmarks against the cost forecasts submitted by companies in their final Business Plans. These comparisons were carried out by aggregating costs across all high-confidence cost categories in each business plan. Where the aggregate company forecast of high-confidence costs was lower than the aggregate efficient cost benchmark, the difference between the two is eligible for BPI Stage 4 rewards

determined by applying the company-specific sharing factors to the amount eligible for Stage 4 rewards.

10.101 Following consideration of Draft Determinations responses, we have modified our approach to determining rewards under Stage 4 to take account of feedback received. Specifically, we have decided to determine Stage 4 rewards at a more granular level than we did at Draft Determination. This means that the comparisons between company forecasts of high-confidence costs and our efficient benchmarks were carried out at the level of individual cost categories for technically assessed costs. As a result of this change, companies receive rewards for beating our benchmark at a more granular level, and these rewards are not offset by higher forecasts elsewhere in the plan.

10.102 We believe that the BPI framework (as set out in SSMD) provided some flexibility on the level of granularity at which the Stage 4 assessment is carried out. The choice of the level of granularity involves the application of regulatory judgement.

10.103 We have exercised that regulatory judgement differently in these Final Determinations, in light of the Draft Determinations responses we received. Calculating Stage 4 rewards at a more granular level means that companies can earn rewards for beating our benchmarks in individual cost areas, which we believe is more consistent with the aims of Stage 4 of the BPI. It is also consistent with our Stage 3 cost assessment, which is undertaken at a similar level of granularity.

11. RIIO-2 in the round, interlinkages and appeals

11.1 In this Chapter we seek to explain how different elements of the RIIO-2 price control relate to each other ('interlinkages') and how our RIIO-2 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 further clarity for licensees and stakeholders on the overall RIIO-2 framework. We also set out our decisions on the post appeals review and pre-action correspondence.

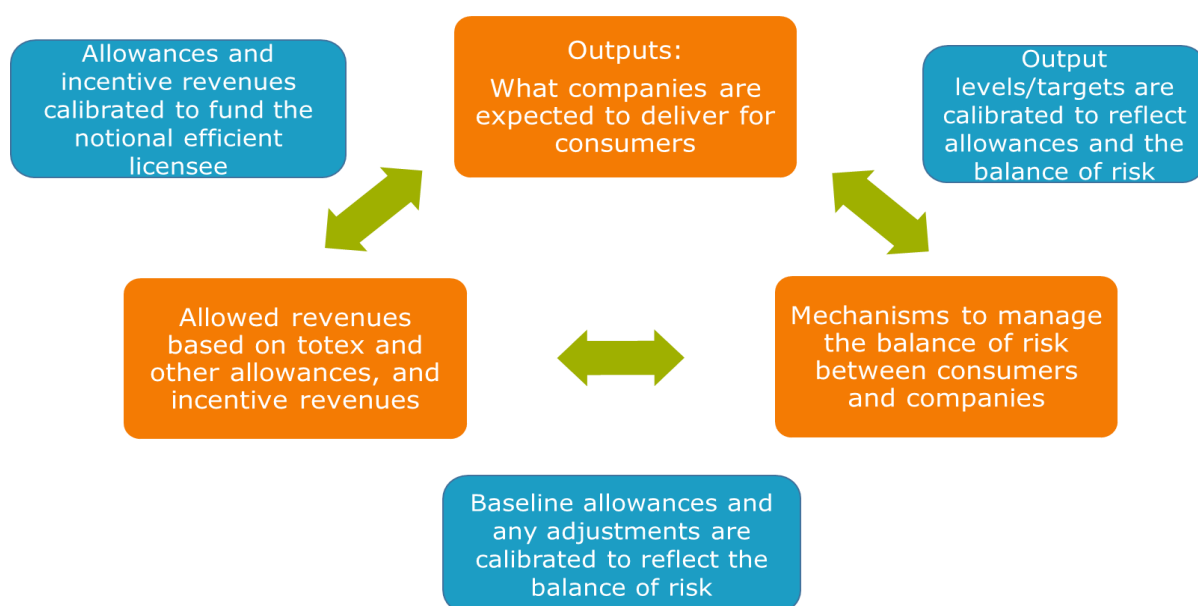
RIIO-2 in the round and interlinkages

11.2 In our Draft Determinations, we described our RIIO-2 package as a system made up of closely linked but distinct pillars:

- outputs, which are the activities and outcomes that we expect the companies to deliver for consumers during the RIIO-2 period. This includes, but is not limited to statutory obligations, price control deliverables, ODI targets, Licence Obligations and ongoing efficiency improvements
- allowed revenues, which allow companies to recover the efficient costs of delivering those outputs for consumers. This is determined by Totex and other allowances that we set to meet the cost of delivering outputs, the WACC and ODI rewards and penalties
- uncertainty and other risk mitigating mechanisms to manage and maintain a fair balance of risk between consumers and companies. This included UMs, RPE and cost of debt indexation, TIM, BPI, and Return Adjustment Mechanisms (RAMs).

11.3 Figure 10 below demonstrates our view on the RIIO-2 pillars.

Figure 10: RIIO-2 pillars



11.4 In our Draft Determinations, we sought to demonstrate that the intrinsic links between these three pillars means that each of them affects and is affected by decisions taken in relation to the other two pillars. We said that the existence of these links mean that changes to a component inside one of these pillars may have an effect on one or more components, both within the same pillar and in other pillars, and the impact the change has on the other pillars would need to be taken into consideration.

Draft Determination responses

11.5 We received 13 responses that directly addressed the issues raised in the Interlinkages Chapter.

11.6 Several respondents said that interlinkages should be assessed on a case by case basis in light of the specific grounds of appeal and only by the CMA, not Ofgem. The shared position from the responses is that where there are interlinkages, Ofgem needs to specify them clearly, and not just refer in general terms to “in the round interlinkages” at a very high level. Where interlinkages inform decision making, Ofgem should state clearly the interlinkages and the effect that they have had.

- 11.7 We agree that the CMA should consider interlinkages on a case by case basis where it is satisfied that the decision appealed was 'wrong'. We have provided our view on interlinkages between the RIIO-2 pillars in our Draft Determinations and in Appendix 3 as suggested by the CMA in their open letter.⁶⁸ Despite suggestions to the contrary, we think that it would not be practical or proportionate to list every way in which individual examples of our overall price control may be linked to every other aspect.
- 11.8 The majority of responses strongly reject the idea that potential appellants should be expected to explain interlinkages and said that this is the responsibility of the regulator. We also received several responses from licensees that expressed disagreement with the proposed policy positions in Draft Determinations rather than on the way in which the interlinkages were set out. We have captured our responses to these within the specific Chapters of our Final Determinations.
- 11.9 One licensee suggested that a working group should be set up to discuss interlinkages within the RIIO-2 price control. We did not pursue this further as we did not think that setting up a working group at that stage of the process would have been feasible or added value.
- 11.10 We received two responses that disagree with our view on interlinkages between ongoing efficiency and innovation. We provide our responses to these point in greater detail in Chapter 5 of this document.
- 11.11 We received two responses that are of the view that there is relatively little discussion in our Draft Determinations on the interlinkage between uncertainty mechanisms and the broader price control. These stakeholders note that we have not struck the right balance of uncertainty mechanisms, which could impact investor appetite. As part of this interlinkages assessment, provided below and through our Finance Annex, we have considered licensees' ability to finance their activities across a wide range of possible outcomes.
- 11.12 We received two responses that disagree with our interlinkages referenced for the wedge and for cost of equity. We received two responses that disagree with the interlinkages referenced for stage 3 of setting the allowed return on equity. One respondent said that the Draft Determinations appear to set out interlinkages to other parts of the price control relating to Stage 1 and Stage 2 of the

⁶⁸ CMA's response to our open letter [here](#)

determination of the allowed return on equity and that these were inappropriate given the purpose of those steps was to set out the assessment of the market evidence on cost of equity. We do not agree that the references to Stage 1 and Stage 2 are inappropriate or that they have interfered with our analysis of CAPM market evidence in those two steps.

11.13 We also received one response that disagrees with our interlinkage between Totex allowances and ODI rewards and penalties, noting that the ODI rewards and penalties are designed to incentivise the delivery of outputs rather than form part of baseline funding. We agree that ODI rewards and penalties are designed to incentivise the delivery of outputs. We have provided our assessment of the ODI package as a whole and how this interacts with the broader RIIO-2 package below.

11.14 We received one response that welcomes the interlinkages set out and nothing that it would be demanding to catalogue interlinkages at this stage. We also received one response that thinks Ofgem should consider the package as a whole rather than piecemeal. We agree that it is important to consider the RIIO-2 package as a whole and that it would not be useful to attempt to document every way in which the price control is interlinked.

RIIO-2 Interlinkages

11.15 We note the points raised in consultation responses as summarised above and have given further thought to the issue of interlinkages and the need to consider our RIIO-2 price control decisions as a package of measures.

11.16 We continue to recognise our price control as a system made up of pillars with interlinked elements within them as set out in our Draft Determinations. We also continue to think that the intrinsic links between the pillars means that each of them potentially affects and could be affected by decisions taken in relation to the other pillars. We believe that if a change is made to one of components within the pillars, it risks making the price control package unbalanced and skewed. We believe that a change should be made with a careful and comprehensive assessment of the potential impact on the overall balance of the package.

11.17 We also continue to think that the interlinkage examples provided in our Draft Determinations are relevant to our decision in Final Determinations. We have provided these in Appendix 3.

11.18 Since our Draft Determinations, we have given further consideration to the question of whether or not RIIO-2 package is balanced across the pillars. As part of this exercise, we have considered whether our RIIO-2 price control, taken 'in the round', represents a fair and balanced settlement for consumers and licensees. We have tried to answer this question in two parts:

- looking across the package of outputs, allowances, ODIs and UMs, have we set the RIIO-2 price control such that a notionally efficient licensee is able to recover the costs of delivering its outputs and meeting its statutory and licence obligations? Has our RIIO-2 package in terms of design adequately addressed the sources of outperformance within RIIO-1? Does our RIIO-2 package ensure that licensees allowances will adjust to meet changes in the external environment?
- have we set the allowed cost of 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?

11.19 The rest of this section explains how we have sought to answer these two questions to give us confidence that the RIIO-2 package is balanced 'in the round'. The assessment below demonstrates where some of the intrinsic interlinkages exist between the components that constitute our RIIO-2 package and how these have been carefully calibrated in the round.

Assessment of the package of outputs, allowances, ODIs and UMs for the notionally efficient licensee

Approach to setting allowances and calibrating the ODI package

11.20 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.

11.21 Our decisions are based on an in-depth assessment of the BPs submitted by licensees, supported by additional information provided in response to supplementary questions, and internal and external cost benchmarks, where available. We think that the introduction of the BPI and the confidence-dependent

- Totex sharing factor, for all sectors except the ESO, provides additional confidence in the quality of company forecasts and our ability to rely on these to determine efficient costs. The BPI also offered licensees with adequate opportunities to earn rewards by submitting high quality and ambitious BPs with the scope for penalties for deficient ones, as our final BPI assessment outcome indicates.
- 11.22 Additionally, our package of financial ODIs includes a combination of existing and new mechanisms designed to encourage licensees to innovate, deliver outputs and service quality that consumers and wider stakeholders want to see.
- 11.23 In the case of new ODIs, we have set targets and rewards/penalties such that licensees and consumers are not exposed to undue risks. For incentives retained from RIIO-1, we have used historical performance to set tough but achievable targets for licensees which challenge companies to go beyond their RIIO-1 performance. Where we have introduced penalty-only ODIs, we have calibrated the minimum standard of performance to ensure that penalties are only applied where there is a significant deterioration in performance that may be indicative of serious management failings, thereby causing detriment to consumers.
- 11.24 Our approach to incentives for the ESO is different from the other sectors. The ESO has a pass-through funding model rather than a totex incentive mechanism. We instead use one overarching incentives scheme which assesses the overall value for money the ESO delivers, considering both its outputs and costs. The ESO benefits from more upside (+£15m) than downside (-£6m), in this incentive scheme. For further protection, we have also capped our power to disallow Demonstrably Inefficient and Wasteful Expenditure (DIWE) for the ESO, as described in Chapter 4 of the ESO Sector Annex. These two features provide a high degree of confidence that an efficient ESO can earn returns at or above its cost of capital. Unlike network licensees, the ESO regime does not provide us (or investors) with a long history of incentive performance, upon which to base an expectation of outperformance. The incentive regime is novel, and many aspects of the ESO's price control is unique. Therefore, we have decided not to make an explicit adjustment for expected outperformance.
- 11.25 We believe that our ODI package taken in the round is balanced and provides the appropriate level of financial incentives to licensees to innovate and trial new ways of delivering services, for the benefit of future consumers. Indeed, we believe that an efficient licensee that responds well to our ODI package could earn positive rewards.

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

11.26 We have also included mechanisms to address the risk that the notional licensee is able to recover uncertain costs within the period. 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 take account of 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-2 by protecting consumers and investors against ex post overall returns from network price controls deviating greatly from expectations.

11.27 We are of the view these mechanisms offer protection against the risk that the out-turn allowances are too low in period and will ensure that the licensees have sufficient allowances to prevent the degradation of the quality of service in period, should the external environment change.

Mechanisms to address systemic outperformance in RIIO-1

11.28 Our RIIO-2 package includes a range of policies and mechanisms which actively seek to address concerns that we had identified with the design of the RIIO-1 package that allowed excess returns at the expense of consumers. These include, for example:

- PCDs: PCDs 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-2 we have set lower Totex cost sharing factors compared to RIIO-1 to more closely align with the level of confidence we have in our cost benchmarks
- balance of baseline funding vs Uncertainty Mechanisms: we have recommended funding a higher proportion of costs through UMs, including re-

openers, UIOLI etc, compared to RIIO-1. Through these mechanisms, we have attempted to reduce the scope for outperformance arising from uncertainties in the need and cost of work.

11.29 However, as set out in our Draft Determinations and in the Finance Annex, our analysis of historical data clearly shows that network companies have, more often than not, spent less than allowances, and beaten performance targets, set by respective regulators. We also believe that there are several structural factors inherent to the regulatory model that provides opportunities for companies to earn excess returns at the expense of consumers, this includes (but is not limited to):

- information asymmetries: We have carried out an in-depth cost assessment, but we remain reliant, to a significant extent, on licensees' own data when setting our cost benchmarks. While we expect the BPI to have reduced the potential harm to consumers from information asymmetries, we do not think it has removed it altogether
- asymmetries in PCD design: While the PCD framework allows us to clawback allowances in the case of non-delivery of funded work, it still offers licensees discretion in deciding whether or not to undertake the work at all. This is a one-way option, that means that the licensees could decide to deliver the work where the associated allowance is favourable, and not deliver the work where the allowance is not favourable. This creates the scope for systemic outperformance and asymmetric bias in favour of the licensees, particularly within the transmission sector
- asymmetries created by re-openers: Re-openers give us the opportunity to take account of more up-to-date information within period when setting cost allowances and output targets. However, a substantial majority of these re-openers are designed to provide additional allowances to take account of upward cost pressures or scope changes. Companies have the discretion to trigger a re-opener or volunteer information, enabling us to trigger a re-opener, that might lead to a reduction in costs compared to our baseline assumptions. This creates an inherent and significant bias in favour of companies.

11.30 Despite the measures we have included to address this outperformance above, we believe that our analysis of historical outperformance and the structural factors set out above, provide good reason to make an explicit adjustment for outperformance when setting the allowed return on equity for RIIO-2 to counteract the systematic risk of out-performance elsewhere within our package.

11.31 Our Draft Determinations included an analysis of how historical outperformance indicated an average underspend of approximately 7% (across all controls, all sectors, all times). We contrasted this with RIIO-2, and an estimate that underspends of approximately 2-4% would deliver expected outperformance of 0.25% on equity. We also considered whether the analysis was suitable for making a RIIO-2 inference by attempting to re-present historical returns in a RIIO-2 context by modifying observed returns to make values more informative for RIIO-2 and the results of this further analysis were consistent with expected outperformance of at least 25 basis points. Notwithstanding this evidence, we acknowledge that past outperformance may not be a perfect indicator of expected outperformance. As a fall-back insurance position for the network licensees we have included an ex post adjustment mechanism which means that each licensee will, if its outperformance is less than 0.25%, receive a top-up allowance, up to 0.25%.

Measures to ensure that a notionally efficient licensee is able to maintain an adequate level of credit quality and attract sufficient equity finance

11.32 We believe that the results 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 in these Final Determinations.

11.33 We have reached this conclusion after having performed updated financeability analysis based on these Final Determinations. Consistent with our Draft Determinations approach 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 that is used to propose revenue allowances in draft determinations
- 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.

11.34 For financeability testing purposes we have tested different possible outturn totex scenarios. The first is what we refer to as "Ofgem FD", which represents the current charge setting totex scenario. We have also tested a higher volume illustrative totex scenario ("Net Zero 1") across all sectors and an additional even higher totex scenario in the ET sector ("Net Zero 2") as this was considered necessary by ET networks given the uncertainty around the eventual spend, in that sector in particular, to meet Net Zero ambitions. These illustrative scenarios (Net Zero 1 and Net Zero 2) do not represent forecasts or indications of re-opener allowances but are cases that could be considered, albeit dependent on several factors. These scenarios test financeability at what we consider to be fairly extreme levels of additional totex.

11.35 As is set out in Chapter 3 of the Finance Annex we have considered whether our decision allows 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 allows licensees to attract equity finance.

11.36 Please see Chapter 5 of the ESO Sector Annex for further detail on the ESO financeability assessment.

Conclusion of our RIIO-2 package in the round

11.37 Overall, we think that the components that make up our RIIO-2 pillars are appropriately balanced to ensure that 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 for consumers and a fair deal for companies and their investors.

11.38 We remain of the view that, in some cases, changing decisions where interlinkages exist could impact the balance between the pillars of the RIIO-2 price control settlement. We think that any changes to decisions that exist between these pillars would require consideration within the context of the wider RIIO-2 package to ensure that the overall coherence of the settlement continues to

represent a good outcome for consumers and a fair settlement for licensees and their investors.

11.39 In the section below we have provided our view on how interlinkages can be taken into consideration through a post appeals review.

Post appeals review and pre-action correspondence

Final Determination

11.40 The nature and scope of any post appeals review will ultimately depend on the terms of any successful appeal to and directions made by the CMA. Any review (if it is necessary) will only be carried out consistently with the CMA's ruling and directions, such as a direction that we re-consider part of the price control. The scope of a post appeals review will be limited to the licensee(s) that are impacted by a direction granted by the CMA to modify their regulatory settlement.

Consultation response summary and rationale for decision

Post appeals review statement

11.41 We received 18 consultation responses. Broadly, respondents noted a lack of understanding as to the need for this statement, with the overall majority flagging concerns and objections. There was strong consensus that the proposed statement of policy would be unnecessary and risks undermining the statutory role of the CMA as well as the integrity and transparency of the appeal process. There was also concern expressed that this would create both legal issues and uncertainty for licence holders which is fundamental to a credible environment for investment.

11.42 A number of the respondents noted that Ofgem does not have the power to overturn elements of a final determination by the CMA or to undo elements of the CMA's determination with which it disagrees. We also received responses that were concerned that the post appeals review would apply to non-appealing licensees.

11.43 We received two responses in agreement with our proposal. These respondents endorse the need for a post appeals review, in the event a successful appeal to the CMA creates knock on impacts to linked decisions in the RIIO-2 price control

settlement that adversely impacts consumers. In these respondents' view, there may be scenarios where flexibility is required to ensure that there is no consumer detriment following a CMA direction.

11.44 We remain of the view that it may be appropriate to conduct a post appeals review in certain circumstances, namely where the CMA has directed it or asked us to reconsider an aspect of our decision following a successful appeal. As provided in our Draft Determinations, this proposal could apply to 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
- the CMA quashes the decision(s) appealed, retakes the decision itself but directs Ofgem to consider interlinkages.

11.45 We consider that there is merit in making clear, at this stage, that this is a possible consequence of an appeal to the CMA. The post appeals review is not intended to undermine the current appeals framework, which we made clear in our SSMC, SSMD and Draft Determinations. The objective of any post appeals review will be to implement the decision or directions of the CMA, which may seek to ensure that we maintain a coherent regulatory settlement in the round having regard to interlinked areas where the outcome of a successful appeal risks creating inconsistencies within the package.

11.46 The policy intention of the post appeals review is not to risk investor confidence. We have set out our view on how this post appeals review may take place and the scope of any such review.

Structure of the post appeals review

11.47 A post appeals review would be carried following a direction by the CMA or where the CMA has requested Ofgem to reconsider a decision or an aspect of the regulatory settlement.

11.48 Where appropriate, we will review the associated interlinkages components of the price control that may need to be adjusted in order to maintain a coherent regulatory settlement for RIIO-2.

11.49 Following this review, we may need to consult on the proposed elements of the price control that we note should be adjusted, as well as any proposed consequential changes to cost allowances.

Scope of a post appeals review

11.50 The scope of any post appeals review will ultimately depend on the particulars of the successful appeal and the directions made by the CMA.

11.51 Depending on these directions, it may involve the interlinkages that exist between the components of the RIIO-2 price control. We have laid out the principles by which the RIIO-2 pillars are interlinked and provided several examples in order to illustrate the nature of the interlinkages in Draft Determinations and above. The examples provided throughout our RIIO-2 documentation are not an exhaustive list of every way in which individual aspects of the price control may be linked.

11.52 In the event of a post appeals review, we may need to consider whether it is necessary to adjust elements of the price control that are interlinked with the aspects of a decision overturned by the CMA. We will take into consideration any relevant interlinkages proposed by the appellant and the CMA, in addition to the interlinkages highlighted in Draft and Final Determinations (where the CMA has asked us to consider them).

11.53 We acknowledge concerns raised by stakeholders that this proposal would apply to non-appealing licensees. As set out above, it should be noted that the scope of the post appeals review will be limited to the licensee(s) that are impacted by a direction granted by the CMA to modify their regulatory settlement. We do not consider that it would be appropriate for Ofgem to modify the licenses of non-appealing licensees following a successful appeal, nor do we consider that the CMA would direct us to do so.

Pre-action correspondence

11.54 We received 14 responses on our Draft Determinations proposal for the pre-action correspondence, with the majority of respondents disagreeing with our proposal. A significant proportion of the responses were of the view that our consultation position goes well beyond the CMA's stated expectation in the Open Letter. The respondents suggest that the pre-action correspondence would be unreasonable for a number of reasons including; it threatens stakeholder confidence; it is

lopsided in Ofgem's favour and in terms of time scales, it would not be fair to expect details of errors to be provided during the Christmas period. It was suggested that this information is more appropriately included in licensees' applications for permission to appeal to the CMA, rather than at any earlier stage before appellants have fully determined whether or not they intend to seek permission to appeal and on what grounds.

- 11.55 One stakeholder's view was that our Draft Determinations position would result in penalties to licensees who fail to engage with the regime. The general feedback from the respondents is that they understand the desire of Ofgem to promote engagement with the proposed regime but are extremely concerned by the idea of appealing licensees being subject to arbitrary penalties at Ofgem's behest.
- 11.56 Finally, respondents questioned the need for this process given that both Ofgem (and in due course the CMA) are likely to already be familiar with the points raised on appeal ahead of time.
- 11.57 One stakeholder is in support of the pre-action correspondence stage, noting that this proposal could reduce the costs and risks associated with an appeal for both parties.
- 11.58 We continue to think that our proposal for a pre-action correspondence stage would be beneficial. We therefore invite prospective appellants to send pre-action correspondence, outlining any intention to appeal, the elements of the RIIO-2 price control that they plan to appeal and an outline of the grounds on which they intend to appeal.
- 11.59 We think that such steps promote early engagement and will be beneficial for all parties. We think that the pre-action correspondence stage will allow for early discussions on the scope and intention to appeal, which could ultimately reduce the costs and risks associated with the appeals process and narrow the range of appeal issues in advance of the appeals process.
- 11.60 We continue to think that prospective appellants who wish to engage in advance, should do so between early December 2020 to early February 2021 - after the publication of Final Determinations and before we are due to publish a decision on the corresponding RIIO-2 licence conditions.

11.61 For the avoidance of doubt, Ofgem is not placing an obligation on the licensee to set out intentions to appeal, nor will the licensee be subject to penalties by Ofgem as a result of not engaging with Ofgem within the pre-action correspondence period. In our Draft Determination, we were making reference to the CMA's view that the allocation of costs at the end of an appeal may take into account appellants who fail to engage at the pre-action stage and notify us about their potential intentions to appeal.⁶⁹ Ofgem reserves the right to make appropriate submissions to the CMA about costs in the event that an appellant declines to engage in pre-appeals correspondence (for example, in a situation where an appellant incurs unnecessary costs by raising an issue in an appeal which would have been easily disposed of by way of pre-appeals correspondence).

11.62 We disagree that this proposal threatens investor confidence or that this goes beyond the expectations of the CMA Open Letter. As above, the intention of the pre-action correspondence stage is not intended to undermine the current appeals framework. The objective will be to bring forward active engagement between the Authority and potential appellants, thereby minimising substantive and procedural issues.

⁶⁹ Paragraph 12 of the CMA's response to our Open Letter [here](#).

12. Impact of COVID-19 on the price controls

12.1 In this Chapter, we will set out our decision on how we will address the impacts of COVID-19 on the RIIO-1 and RIIO-2 price controls.

12.2 Measures taken by Government and devolved administrations to control COVID-19 had an immediate impact on all sectors. This was recognised through our regulatory easement framework which lasted until 30 June 2020. Although the easement was time limited, it is recognised that there may be ongoing impacts of COVID-19. We believe that the current framework⁷⁰ in place since 1 July 2020 is sufficiently flexible to deal with any future restrictions that may be put in place in response to COVID-19.

Adjusting RIIO-1 and RIIO-2 price controls

Purpose: To mitigate the adverse impact of COVID-19 on network company performance, through the adjustment of allowances and output targets.

Benefits: To protect consumers and network company performance from the impact of COVID-19.

Final Determination

Impact On	Final Determination	Draft Determination
Review of RIIO-1 performance	Adjustments to output targets and allowances made at RIIO-1 Close-out	Same as FD
Setting RIIO-2 baselines	Adjustments to output targets and allowances made at RIIO-1 Close-out	Adjust Final Determinations or create an uncertainty mechanism
Reviewing RIIO-2 Performance	Adjustments to output targets and allowances made at RIIO-2 Close-out	Create an uncertainty mechanism

⁷⁰ [Impact of COVID-19 on network companies – regulatory expectations from 1 July 2020](#), Ofgem, 16 June 2020.

Final Determination rationale and Draft Determination responses

12.3 We received fifteen responses on our proposals, with primary focus on our proposal on RIIO-2 output adjustments through a re-opener or adjustments at Final Determinations.

Impact on RIIO-1 performance

12.4 We have decided to implement our Draft Determination proposal to consider any impacts of COVID-19 on RIIO-1 outputs within the close-out mechanism for RIIO-1. This will allow Ofgem to assess the full impacts of COVID-19 at the end of the price control and will ensure network companies are consulted prior to any final decision. This position was supported by a number of respondents. No alternative mechanisms were suggested.

Impact on RIIO-2 baseline allowances

12.5 We have decided that we will not be making COVID-19 related adjustments to our RIIO-2 baseline allowances. A number of network companies were supportive of this position, though others proposed adjustments through our productivity assumptions or ex-ante increase in baseline allowances. We do not consider the evidence provided in Draft Determinations responses to be sufficient to allow us to accurately assess the impact on cost efficiency. Further detail on this is set out in Chapter 5 of this document. We also do not consider that the evidence provided by network companies allows us to understand the extent of impacts that COVID-19 is having on the network companies.

Impact on RIIO-2 performance

12.6 We have decided not to implement our Draft Determination position to create UMs to make adjustments to the RIIO-2 price control. We have decided that we will address any impacts of COVID-19 on RIIO-2 outputs as part of the close-out mechanism for RIIO-2 as it will allow us to consider the long-term impact of COVID-19 on company performance. Respondents had mixed views on this. Some network companies and other stakeholders supported the introduction of a re-opener mechanism. However, the majority of respondents were of the view that a specific re-opener was not necessary due to the level of uncertainty over the scope of such a re-opener.

13. Post Final Determinations work for RIIO-2

13.1 In this Chapter, we set out our early thinking on the post Final Determinations work, including development of the close-out process for RIIO-2 and engagement with stakeholders in relation to the disapplication licence condition.

Approach to close-out for RIIO-2

13.2 The RIIO-2 price control sets out what network companies must deliver, and the revenue they can collect to deliver this. As a result of these mechanisms, some areas of the RIIO-2 price control need to be settled ("closed-out") once the price control has ended.

13.3 There are two distinct categories of close-out:

- For certain mechanisms that have a clear mechanistic methodology for determining output delivery and calculating financial rewards/penalties or adjustment to allowances, Ofgem will require the final year's data from the RIIO-2 price control to ascertain a company's overall performance and appropriate financial adjustments. These mechanisms may include: ODIs, UIOLIs (where nothing has been spent), and mechanistic PCDs.
- There are also several cost areas where there is no defined mechanistic methodology, to allow for flexibility in output delivery and where an assessment of the outputs delivered and the expenditure incurred is required. These mechanisms include some aspects of NARMs and evaluative PCDs.

13.4 During the close-out process, where relevant, we may ask companies to provide further information on the outputs they delivered and their expenditure in specific areas. We will assess this information and consider whether network companies have delivered on their commitments and taken investment decisions which will provide long term benefits to customers. The onus will be upon network companies to demonstrate that they have efficiently incurred expenditure to deliver consumer benefits, otherwise, we could take back some of the associated funding and return them to customers. Any adjustments will be made to allowed revenues in the RIIO-3 price control.

13.5 Our starting point for each methodology will be to review what was published in the relevant RIIO-2 documents, including relevant licence conditions and

Associated Documents. We will use these documents as a basis for building the RIIO-2 close-out approach.

- 13.6 Where possible, we will look to establish a principles-based approach for the methodologies, maintaining consistency across the different areas as far as possible.

Disapplication licence condition

- 13.7 Network licences have for a number of years included a disapplication condition,⁷¹ which allows licensees to make a formal request for the disapplication of the relevant special conditions (in whole or in part).
- 13.8 In the past we have noted that there may be circumstances in which the revenue stream set in a price control ceases to provide sufficient funds for a regulated licensee, such as in the event of financial distress. In these cases, one option is to re-open the price control during a regulatory period to re-set revenue allowances or the parameters that give rise to those allowances. While we retain the view that this could be a reason to use this condition we believe that we should achieve further clarity by reviewing whether there are other reasons this condition could be used.
- 13.9 There are some differences between sectors in how this condition is drafted and how it would operate.
- 13.10 We proposed some changes to the relevant condition at a licence drafting working group in December 2019, but the feedback indicated to us that further thought and consultation with licensees would be required. We intend to work with stakeholders and conduct a review of:
- the potential circumstances and reasons for using this condition
 - whether the same drafting should apply across the sectors
 - whether the intent of the condition is appropriately clear
 - whether the drafting captures the stated intent
 - whether the drafting is fit for purpose.

⁷¹ GD Special Condition 4A, GT Special Condition 11A, ET special condition 8A.

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Appendix 1 – Glossary

A

Allowed return on capital

Ofgem allowance based on the assessed weighted average cost of capital (WACC) including the expected performance of the price control.

Allowed return on debt

Ofgem allowance in respect of the cost of debt, calculated on a pre-tax basis with reference to a trailing average index of debt costs.

Allowed return on equity

Ofgem allowance based on the assessed cost of equity and expected performance of the price control. Ofgem calculates the allowed return on equity and cost of equity on a post-tax basis.

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-2 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

Balancing Services Use of System (BSUoS) charges

The BSUoS charges recover the cost of day-to-day operation of the transmission system. Generators and suppliers are liable for these charges, which are calculated daily as a flat tariff for all users.

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 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.

Biogas

A gas produced by the biological breakdown of organic matter in the absence of oxygen. This gas can be used in a similar manner to natural gas to produce heat or electricity but unlike natural gas, biogas can be renewable fuel.

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 CO₂ equivalent) caused directly and indirectly by the reporting company. Direct and indirect emissions sources are categorised into scope 1, 2 and 3 emissions.

The greenhouse gases that may be reported include carbon dioxide (CO₂), methane (CH₄), sulphur hexafluoride (SF₆) and specified kinds of hydro fluorocarbons and perfluorocarbons.

Greenhouse gas emissions are measured as tonnes of carbon dioxide equivalence (tCO₂-e). This means that the amount of a greenhouse gas that a business emits is measured as an equivalent amount of carbon dioxide which has a global warming potential of one. For example, in 2019–20, one tonne of SF₆ released into the atmosphere will cause the same amount of global warming as 23,500 tonnes of carbon dioxide over the next 100 years⁷². So, one tonne of SF₆ is expressed as 23,500 tonnes of carbon dioxide equivalence, or 23,500 tCO₂-e.

Business Plan Data Template (BPDT)

A set of data templates that gas and electricity transmission and gas distribution network companies used when submitting both draft Business Plans to the RIIO-2 Challenge Group, and final Business Plans to Ofgem.

Business Plan Incentive (BPI)

A RIIO-2 incentive to encourage companies to submit ambitious Business Plans. Business Plans have been assessed under 4 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.

C

Capital Asset Pricing Model (CAPM)

⁷² https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-PotentialValues%20%28Feb%2016%202016%29_1.pdf

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 gas pipelines or electricity 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.

Challenge Group (CCG)

Ofgem has set up a central RIIO-2 Challenge Group that is independently chaired. It provided Ofgem with a public report on companies' Business Plans from the perspective of end consumers.

The 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 competition during RIIO-2. 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 Transmission Owner (CATO)

The late CATO regime is one of the late competition models that may be applied to projects that meet the Criteria for competition during RIIO-2. Under late CATO 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 CATO responsible for construction and operation of the project. The CATO 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).

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 company 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

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 competition

The Criteria for competition is the criteria used to identify projects that may be suitable for late model competition across the electricity transmission and gas sectors. These criteria are as follows:

- new
- separable
- high-value: projects of above £100m expected capital expenditure.

Customer Engagement Group (CEG)

For RIIO-2, distribution companies were each required to set up a Customer

Engagement Group. These Groups provided Ofgem with a public report on their views and the companies' Business Plans from the perspective of local stakeholders.

D

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

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

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 licenced DNOs that are subject to RIIIO 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 (DSO) roles

The development of distribution system operation roles is a live and evolving policy area with various workstreams currently in progress. In general, DSO roles refer to innovative techniques and use of market-based solutions as alternatives to network reinforcement, as well as greater coordination with other network and system operators to achieve efficient outcomes in a whole system context.

Distribution Use of System (DUoS)

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

Digitalisation Strategy and Action Plan (DSAP)

This refers to our licence condition (Special Condition 37) that requires networks to produce Digitalisation Strategy documents every 2 years and Action Plans every 6 months. These will outline their vision for digitalisation and their order of activities leading to this vision respectively.

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.

Energy Not Supplied (ENS)

The incentive to minimise loss of power supply from the electricity transmission network.

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 were plans that the licensees were required to submit with their Business Plans in December 2019 to address the impacts of their business and network activities on the environment and set out their commitments to addressing these impacts.

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 ante base revenue

Ex ante base revenue (also referred to as baseline revenue) is the amount of revenue network companies are allowed to recover as set up front at the beginning of the price control. Additional revenue may be allowed during the price control under certain, specified circumstances, for example, if it is triggered under an Uncertainty Mechanism.

Ex post

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

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).

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 England⁷³, 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.

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.

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.

Gas System Operator (GSO)

The entity responsible for operating the gas transmission system and for entering into contracts with those who want to connect to and/or use the gas transmission system. National Grid Gas Transmission is the gas transmission system operator in Great Britain.

⁷³ <https://www.gov.uk/government/consultations/fuel-poverty-strategy-for-england>

Gas Transporter

The holder of a Gas Transporter licence. The gas distribution networks and National Grid Gas Transmission are Gas Transporters.

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.

Gilts

A bond issued by the UK government.

H

Headroom

A term in finance related to borrowing which has different meanings in different contexts. Here we use it to mean a 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.

Insulation and Interruption Gas (IIG)

A gas with a global warming potential of greater than zero, used within electrical switchgear and transmission assets with a suitable dielectric strength to enable use as an insulator to prevent discharge or as an interruption aid to prevent flow of current during planned or non-planned switching.

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.

L

Large Onshore Transmission Investments (LOTI) Re-opener

A RIIO-ET2 re-opener that allows ETOs to bring forward funding requests for certain large network investments expected to cost £100m or more.

Large Project Delivery (LPD)

A suite of RIIO-2 mechanisms to incentivise the timely delivery of large (£100m+) projects.

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 Capex

Capital expenditure on new assets to accommodate changes in the level or pattern of electricity or gas supply and demand.

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'.

M

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).

Medium Sized Investment Projects (MSIP)

An annual RIIO-ET2 re-opener which allows ETOs to bring forward funding requests for sub-£100m projects across a range of different areas, most of which are driven by third parties.

N

National Electricity Transmission System (NETS)

Means the system consisting (wholly or mainly) of high voltage electric lines owned or operated by transmission licensees within Great Britain, in the territorial sea adjacent to Great Britain and in any Renewable Energy Zone and used for the transmission of electricity from one generating station to a sub-station or to another generating station or between sub-stations or to or from any interconnector and includes any electrical plant or meters owned or operated by any transmission licensee within Great Britain, in the territorial sea adjacent to Great Britain and in any Renewable Energy Zone in connection with the transmission of electricity.

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.

Net Zero and Re-opener Development Use It or Lose It (UIOLI)

This UIOLI provides network companies with an allowance to undertake early development work on projects ahead of certain specific re-opener submissions. In GD and GT, it also can be used for the construction of sub-£1m.

Network Access Policy (NAP)

A policy that is designed to facilitate efficient performance and effective liaison between the ESO and the TOs in relation to the planning, management and operation of the National Electricity Transmission System (NETS) for the benefit of consumers.

Network Asset Risk Metric (NARM)

The monetised risk associated with a NARM asset or the monetised risk benefit associated with a NARM Asset intervention.

Network charges

These are charges recovered for the use of network services.

Network Company

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

Network Innovation Allowance

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

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 Future Energy Scenarios (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.

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.

Notional company/business

A hypothetical, but typical, network company.

○

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 RIIIO-2, ODIs will apply where service quality improvements beyond a level that is funded through ex ante 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.

Pre-Construction Funding (PCF) Re-opener

A RIIIO-ET2 re-opener that allows ETOs to bring forward funding requests for pre-construction works for projects that may be brought forward through the LOTI re-opener.

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.

Price Control Deliverables (PCDs)

In RIIIO-2, 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.

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 Real Price Effects (RPEs).

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.

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.

Repex

Repex is the Health and Safety Executive enforced gas mains replacement programme.

Research and development (RandD)

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

Retail Prices 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 Review 1 (RIIO-ED1)

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

RIIO-Gas Distribution Price Control Review 1 (RIIO-GD1)

The price control review applied to the gas distribution network operators. It runs from 1 April 2013 to 31 March 2021.

RIIO-Transmission Price Control Review 1 (RIIO-T1)

The price control review applied to the electricity and gas transmission network operators. It runs from 1 April 2013 to 31 March 2021.

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' % in real terms.

RPI-X@20

Ofgem's comprehensive review⁷⁴ of how we regulate energy network companies, announced in March 2008. 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. 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.

SF6

Sulphur Hexafluoride gas. This is used in some high-voltage switchgear due to its excellent insulating properties.

⁷⁴ <https://www.ofgem.gov.uk/network-regulation-riio-model/current-network-price-controls-riio-1/backgroundrpi-x20-review>

Shrinkage

Shrinkage is a term used to describe gas either consumed within or lost from a gas transporter's system. It includes leakage from the network, gas used by network operators during transportation (eg to power compressors), and gas stolen from the network.

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.

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 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 which 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).

Storage (gas)

Installations owned by GDNs and contracted storage capacity from third parties, for example salt cavities, liquefied natural gas, storage vessels and gas holders. Gas storage is required to balance diurnal and seasonal variations in supply and demand.

Strategic Innovation Fund (SIF)

A funding mechanism for strategic energy system transition innovation projects.

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.

System Operator-Transmission Owner Code (STC)

The document that defines the high-level relationship between the ESO and the TOs and OFTOs, which is required to be in place pursuant to Standard Condition B12 (System Operator – Transmission Owner Code) of the electricity transmission licence.

T

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). It also includes replacement expenditure (repex) in gas distribution. Totex is made up of fast money and slow money.

Totex Incentive Mechanism (TIM)

The TIM approach incentivises companies to find cost efficiencies and for the benefits of these efficiencies to be shared with consumers. It incentivises companies to be more efficient by providing them with a share of any underspend or overspend of their totex. The remainder is passed onto consumers.

Total Market Return (TMR)

The TMR is a measure of return that equity investors expect for the market-average level of risk.

Transmission Licensee

Means the holder for the time being of a licence granted or treated as granted under section 6(1)(b) of the Electricity Act 1989.

Transmission Network Use of System (TNUoS)

TNUoS charges recover the cost of providing and maintaining shared (or potentially shared) electricity transmission assets, ie assets that cannot be solely attributed to a single user. TNUoS charges are recovered from all generation and demand users of Britain's electricity transmission system. These charges vary by location, reflecting the costs that users impose on the transmission network to transport their electricity.

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 ex ante 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.

User Group

For RIIO-2, transmission companies and the ESO were required to set up a User Group. This Group provided Ofgem with a public report on their views and the companies' Business Plans from the perspective of network users.

V

Volume driver

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

W

Weighted Average Cost of Capital (WACC)

The weighted average of the cost of equity and the cost of debt, where the weighting is provided by the gearing ratio.

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.

Appendix 2 – Competition Proxy Model

A2.1 In our SSMD we confirmed that the Competition Proxy Model (CPM) would remain in place during the RIIO-2 period and potentially be applicable to projects in all sectors that meet the criteria for late model competition (new, separable and high value). In Draft Determinations, we set out in Appendix 2 to the Core Document how we proposed the CPM arrangements would be applied in RIIO-2. This confirms how these arrangements will be applied during the RIIO-2 period.

What is the Competition Proxy Model?

A2.2 As set out in the September 2018 Update on the CPM delivery model⁷⁵ and Appendix 2 of Draft Determinations, the CPM involves setting a largely project-specific set of regulatory arrangements to cover the construction period and a 25-year operational period for an asset (in contrast with setting arrangements rather than for a portfolio of assets under a price control settlement). It is intended to replicate the efficient project finance structure that tends to be used in competitive tender bids for the delivery and operation of infrastructure projects.

A2.3 The CPM therefore assumes that the full construction debt is raised upfront and then drawn down upon as expenditure is incurred on the project. The allowed cost of capital (as determined through the CPM cost of capital methodology set out in the September 2018 CPM Update) is applied to the annual allowed expenditure during construction. This allowed expenditure is determined through our detailed assessment of the project costs, which is referred to as the Project Assessment (PA) process. By the end of the construction period, the full construction period capital costs allowance will be uplifted by the annual construction cost of capital to determine a total capital cost value at the end of construction. This capital cost value, minus any allowed revenue recovered during construction, will be recovered by the developing network company over the following 25-year operational period with the operational cost of capital applied.

A2.4 An annual operating cost allowance will apply during the operational period. This annual allowance will be added to the annual recovery of the construction capital cost value across the full 25-year revenue term. The annual revenue allowance

⁷⁵ <https://www.ofgem.gov.uk/publications-and-updates/update-competition-proxy-delivery-model>

during the operational period will be based on this total amount including returns distributed evenly on an NPV neutral basis across the full revenue term.

- A2.5 An appropriate financial model that reflects the complexity of the assumed financing arrangements is central to a project finance approach. Within the RIIO-2 period we propose that each individual CPM project will have its own CPM financial model. This model will be consulted on at the PA stage when the cost of capital, and construction cost allowances for each project are set, and then utilised for the remaining years in which the CPM arrangements apply to the relevant assets. The individual CPM financial models for each company will feed into allowed revenue for RIIO-2 through a separate line within the pass-through section of the PCFM outside of the application of company sharing factors.
- A2.6 If the relevant developers of CPM projects do not propose their own financial model, the Amberside model, originally developed in the context of the HSB project in RIIO-T1, will be used as the default means of determining project revenue from the relevant financing arrangements and project capital and operational costs. Where the Amberside model is used in RIIO-2, we will consult on the relevant model inputs as part of the PA process.
- A2.7 Instead of CPM allowances flowing through the Annual Iteration Process, the CPM-specific sharing factor will be applied at the end of construction through the Post-Construction Review process.

Needs case assessment

- A2.8 As referenced in Chapter 9, we propose that within the RIIO-2 period, only new and separable projects above £100m that are subject to other uncertainty mechanisms will be considered for CPM. Each such project will first be subject to a review of the option being developed as part of an assessment of whether the investment is needed under the relevant RIIO Uncertainty mechanism. In the Electricity Transmission sector, where we determine at Initial Needs Case stage that a LOTI project should be delivered through CPM it will be subject to a final needs case process under the CPM rather than LOTI arrangements. This CPM final needs case will be identical to the Final Needs Case process followed under LOTI.

Setting the cost of capital

A2.9 The cost of capital for both the construction and operational period is set based on the CPM cost of capital methodology set out in the September 2018 CPM Update.

A2.10 We consider that it is most appropriate to fix the allowed construction cost of capital at Project Assessment (see 'Cost assessment and treatment') but only set an indicative cost of capital for the operational period at that time. We will consider at Project Assessment for each project whether or not it is appropriate to also fix the cost of capital for the operational period before ahead of construction beginning, or whether to set it at the completion of construction.

A2.11 We determine the level of cost of capital that the developing network company is able to recover from consumers during the construction and operational phases of the project. However, we do not mandate that the assumed capital structure within that methodology is followed in the delivery of the project. For example, if a developing network company wishes to implement a higher project gearing during construction and allow for a higher return on equity, this would be permitted as long as it does not result in any consumer detriment relative to the structure assumed within our cost of capital methodology.

A2.12 Below, we summarise the methodology for setting the financing costs under CPM and detail the specific adjustments to this methodology that we may consider appropriate for particular projects during RIIO-2. This is to ensure that the cost of capital methodology under the CPM is fully reflective of the risks faced by the specific projects funded by it.

Cost of debt during construction

A2.13 For CPM projects we will continue to rely on the iBoxx index with a tenor that is aligned with our view of the appropriate and efficient length of the construction period. This means that if a project has a construction period of 3 years, we will look to implement a debt tenor of 3 years for the construction period.

A2.14 Our central assumption is that the BBB-rated debt is the appropriate benchmark for projects that meet the criteria for competition. BBB-rated debt will therefore be used, with an appropriate allowance for transaction costs, as the high end of the cost of debt range during construction. We will consider on a project-by-project basis whether the risk profile of a specific project suggests that A-rated

debt is a more appropriate benchmark for the low end of the cost of debt during the construction period. For example, this could be appropriate where a project has a particularly short construction period or involves a relatively low level of construction risk.

Cost of equity during construction

A2.15 The cost of equity during the construction period for future projects will be derived from benchmarks of the following building blocks of the cost of equity during construction:

- risk-Free Rate
- total Market Returns
- equity beta ($E\beta$).

Risk-free rate (RFR)

A2.16 RFR is a measure of the market derived level of expected return for an investment that faces no risk. For CPM projects this will be benchmarked at the 10-year trailing average of the 10-year UK gilt rate. We consider that using the 10-year gilt rate provides sufficient protection from potentially more volatile shorter terms rates. We will therefore use this approach for any future project that is delivered through the CPM during RIIO-2.

Total Market Returns (TMR)

A2.17 TMR is a measure of the average expected equity return within the market. As referenced in our recent updated decision on the delivery model for the Hinkley-Seabank project, we consider it appropriate that the TMR under CPM is aligned with the methodology applied in the wider RIIO price control.

Equity beta ($E\beta$)

A2.18 $E\beta$ is a measure of how much the specific assets under consideration are expected to vary from the TMR. Under CPM, the $E\beta$ range follows the same methodology as the IDC methodology used to set the IDC return during the construction period of offshore wind projects and interconnectors subject to the cap and floor regime. The low end of this range is derived from the $E\beta$ benchmark that was used in the setting of the cost of capital for SHE Transmission's RIIO-T1 price control determination. The high end of the $E\beta$ range is derived from analysis of how

construction companies, as a comparator to the delivery of construction projects that meet the criteria for late competition, compare to the expected return in the FTSE All-share index.

Cost of debt during the operational period

A2.19 As set out in the CPM Update, the cost of debt range for CPM projects during the operational period will be derived from the average across the iBoxx 10-year plus index at A-rating and the same index at BBB-rating. Given our decision to use the iBoxx Utilities 10yr+ index for RIIO-2 debt allowances (see Finance Annex for details), we will consider, on a project-specific base, whether this approach should also be adopted for CPM projects during the RIIO-2 period. We will also continue to monitor the extent to which the tenors of the debt within the 10-year plus index appropriately aligns with the 25 year operational period of CPM projects. Where necessary, we will also consider the use of different tenor indices within the setting of the cost of debt for the operational period under CPM.

Cost of equity during the operational period

A2.20 The initial cost of equity range for the operational period under CPM will be set based on the rates observed in the winning bids under the OFTO regime in Tender Rounds 2 and 3.

A2.21 We will continue to set the operational equity return under the CPM for future projects based on the most contemporary evidence available from the OFTO regime. This is because we continue to believe that OFTOs represent an accurate reflection of the risk profile of the assets delivered under projects that qualify for funding through the CPM.

Adjustments to the arrangements to facilitate a Project Finance approach

A2.22 The cost of equity benchmarks from the OFTO regime reflect the project finance approach that is generally followed under that regime. Whilst we do not consider that the cost of capital ranges for either the construction or operational periods under the CPM specifically require a project finance approach being taken, we will consider where appropriate the potential funding of efficient costs incurred securing a project finance approach.

A2.23 Specifically, our Project Assessment stage will consider any costs associated with setting up a special purpose vehicle (SPV) for the project, and any necessary

reserve accounts or other guarantees required to implement such an approach. Efficient, evidenced costs will be allowed for in the project revenue allowance rather than through the project's cost of capital. Any such decision will be on a project-by-project basis and will only be considered where the developing network company specifically confirms its intention to pursue a project finance approach.

Allowed revenue during the construction period

A2.24 Evidence from our previous work developing the CATO regime suggested that there can be consumer benefits in allowing revenue during construction for larger projects with extended construction periods. These benefits come from reducing the cost of capital by reducing the cash flow limitations on the developer. For this reason, for projects under the CPM that we consider require a construction period of over 4 years (excluding pre-construction activities), the CPM will allow for revenue during construction.

A2.25 Any revenue provided during construction will cover only the allowed cost of debt, based on the upfront costs set at our Project Assessment. This allows debt to be serviced during construction but retains the appropriate delivery incentives that would be in place under a typical project finance approach.

Adjustments for inflation

A2.26 Within our work to implement CPM within the RIIO-T1 arrangements, we sought to allow flexibility in how the revenue allowance for a CPM project is linked to inflation. During RIIO-2 we propose that allowances for CPM projects are linked to CPI-H in line with the rest of the price control and will develop the associated licence arrangements on this basis. However, to retain flexibility, network companies will be able to make an evidence-based case for why we should use an alternative approach for specific projects as part of the Project Assessment process.

Cost assessment and treatment

A2.27 The approach to setting and monitoring the efficient costs of future projects under the CPM will follow the following framework as set out in the September 2018 CPM model update.

A2.28 The cost assessment process under the CPM will have three stages. It will consist of:

- a Project Assessment before construction begins
- annual reporting during the construction period
- a Post-Construction Review (PCR) when construction is completed.

Project assessment

A2.29 Under the CPM we will formally review and set cost allowances at PA. Capital cost allowances will be finalised at the PA, subject to the outcome of the annual reporting process and PCR, which are explained later in this document. Provisional allowances for operating costs will also be set at the PA, before being finalised at the PCR.

A2.30 Capital costs will be formed of controllable firm costs that have been agreed (either incurred or forecasted), and risk and contingency costs that are estimates.

A2.31 For each project we will also determine the exact value of the sharing factor at the PA.

A2.32 Assessment of the controllable (firm) costs

A2.33 Our assessment of the firm capital costs will include the following elements:

- consideration of the suitability of the tender processes and subsequent award of contracts
- use of benchmarking, where applicable, as a signpost exercise to establish the efficiency of the costs
- detailed review of the submitted firm capital costs on an overall and component basis
- as part of annual reporting and the PCR, we will assess the actual spend in relation to firm costs to ensure that actual spend is in line with the cost allowances set at PA.

Assessment of uncertain risk and contingency costs

A2.34 We expect that each project will have areas of cost uncertainty relating to both risk-related expenditure and contingency costs. The uncertain nature of these cost areas is one of the reasons why the capital allowance set at the PA will be reviewed annually and at the PCR.

A2.35 At PA we will also identify risk costs which we do not consider should be funded up front. This could include risks that are unlikely to occur, but that would be likely to have a large impact, if they did occur. It could also include other risks that are difficult or inefficient to quantify up front. These “qualifying cost areas” will be treated as part of the PCR.

A2.36 As part of annual reporting and the PCR, we will assess the actual spend in relation to these costs and update the allowances accordingly.

Assessment of operational period costs and setting of operational cost allowance

A2.37 We will set an indicative operational cost allowance at PA based on an efficiency assessment of the relevant developing network company’s proposed costs. This will include an assessment of the proposed inspection, operation, and maintenance strategy for the assets once built. At Project Assessment for each project we will consider whether it is appropriate to fix the operational cost allowance ahead of construction beginning, or whether to set it at the completion of construction.

Post construction review

A2.38 The PCR will serve three main functions:

- assess whether any qualifying risks from the PA have eventuated and, if so, establish the efficient level of funding under the terms of the CPM (the costs associated with these risks will not be subject to the sharing factor)
- reconcile all of the remaining actual costs incurred during construction, which will have been reviewed by Ofgem during the annual reporting, against the allowances set at PA (the sharing factor will also be applied to underspends and overspends on each individual cost item)
- finalise the ongoing operational costs for the project.

A2.39 We consider that this approach to setting cost allowances under the CPM will ensure that a company is appropriately incentivised to minimise costs of the kind it can control, while avoiding it receiving windfall gains or suffering losses from risks it cannot control.

A2.40 The result of the PCR will be an update CPM project cost allowances, which will be reflected in the 25-year operational period of the project over which these costs will be recovered.

A2.41 We would expect to start the PCR process at the earlier of:

- 90% spend committed on the project
- one year after the delivery date set out in the network company's licence for the project
- if the project is driven by a single large generator, at any point during construction if it becomes apparent that the generator project will be materially delayed due to factors which are beyond the developing network company's control.

A2.42 Where the above criteria is met more than 12 months before the end of the construction period, for reasons outside of the developing company's control, the company will be able to apply for an adjustment to its costs within the construction period. This would be referred to as a "Mid Construction Review (MCR)", with additional funding provided subject to our assessment of the evidence provided.

A2.43 Where an MCR is triggered for a CPM project, a PCR will still be applied at the end of the construction period.

The sharing factor

A2.44 The developing network company will share underspend or efficient overspend of the cost allowances that we set at PA with consumers. The sharing factor on these costs will be applicable to each specific cost item as opposed to the total project costs and will be assessed on a case-by-case basis. This will retain the incentive on a developing network company to drive down the construction costs.

A2.45 The sharing factor will not be applicable to expenditure associated with qualifying risks that are considered through the PCR. For those events, the network company will receive full funding for the costs providing that those events are eligible for funding under the PCR and the costs are efficiently incurred.

A2.46 The exact value of the sharing factor for each project will be determined at the PA. Whilst our starting expectation is that it will be set at a similar level to the rate set for the relevant company under RIIO-2, with the final rate will be contingent on

the proportion of the total costs that are submitted for each project that we determine should only be funded through the PCR rather than via an ex-ante allowance.

Treatment of late delivery

A2.47 For each project funded through the CPM, a specified project output and date will be inserted into the relevant licence. This will indicate what needs to be delivered by the project and by when. On a project-by-project basis we will consider whether to apply any of our Late Project Deliverable proposals. In line with our usual processes, we would also consider whether any late delivery against this date constituted a breach of the licence condition and whether to consider enforcement action. In considering whether this is the case or not, we would follow our usual processes and policies for enforcement.

A2.48 Irrespective of whether any delay is treated as a breach of licence requirements, we propose that additional costs incurred during a delay will not be reflected in the revenue allowance during construction. Subject to the arrangements set out in the preceding section on the PCR, only unavoidable costs incurred during delays will be reflected in the revenue stream and recovered over the 25-year operational period. Where it can be evidenced by a developing network company that a construction delay was unavoidable and outside of its control due to exceptional circumstances, it would be able to earn the allowed construction cost of capital during the length of the delay.

Arrangements during the operational period

Opex

A2.49 As explained above, we will set provisional operational costs for the 25-year revenue term of each project at the PA. This will provide developing network companies with a degree of confidence as to what cost allowance to expect during the operational period. We intend to finalise the operational cost allowance at the PCR unless we determine from evidence provided by the network company that those costs can be clearly and accurately determined at the PA.

Cost re-openers

A2.50 Similar to OFTOs and Interconnectors, the CPM will include a cost re-opener mechanism to compensate developing network companies for low probability, high

impact events that they cannot control (eg force majeure events) that trigger a sufficient increase in opex costs. The exact threshold we set for reopening the opex costs will depend upon the quantum and nature of the opex costs identified at PA and will likely be proportionate to the threshold set under the OFTO regime. The developing network company would be able to make a claim for any efficiently incurred additional costs beyond the relevant threshold where a qualifying event occurs during the operational period.

A2.51 In addition, and similarly to the OFTO regime, the CPM will provide protection against certain unanticipated changes in law. Under these arrangements, the developing network would be able to claim for material increases in costs associated with specific changes in law that impact directly on the cost it incurs on a CPM project.

Additional capex requirements during the operational period

A2.52 During the revenue term, it is possible that the assets delivered through the CPM will need to be upgraded to accommodate additional capacity or connections. Where any upgrade is demonstrated to be needed, and the upgrade is forecast to meet the late model competition criteria (ie the upgrade is new, separable and high value), we expect the regulatory treatment will mirror the prevailing arrangements in place at the time. This could mean the CATO, SPV model or the CPM are implemented to deliver the upgrade.

A2.53 Where such a network upgrade is demonstrated to be needed but does not meet the criteria for late model competition, we propose setting a cost allowance for the work based on prevailing RIIO arrangements and market conditions at the time the cost allowance is set.

Identifying CPM project costs

A2.54 It will be important to ensure that costs associated with the assets delivered by a CPM project and incurred during the construction and operational periods are identifiable as separate from the remainder of RIIO-2 and any future price controls. This will ensure that costs are appropriately captured as relating to the CPM projects, rather than the wider RIIO portfolio. Where it is efficient to fund CPM project-specific operational costs through an allocation of cost from a wider recorded cost covering work within RIIO, we will expect the relevant network to propose and adhere to a clear and consistent allocation approach.

Treatment of work that does not meet the criteria for competition

A2.55 It is possible that only part of a project meets the criteria for competition and so CPM is only be applied to part of a project. In these cases, any work that does not meet the criteria for competition will not be included in the CPM and will instead be funded through the prevailing UM arrangements. For example, in the ET sector, where the CPM is applied to part of a qualifying LOTI project, any aspect of that LOTI project that does not meet the criteria for competition will be funded through the prevailing LOTI arrangements.

Appendix 3 - RIIO-2 Interlinkages

A3.1 In our Draft Determinations, we provided several examples to illustrate the nature of the interlinkages between the RIIO-2 pillars. We continue to think that these interlinkages are relevant within the context of our Final Determinations.

A3.2 The examples provided are not an exhaustive list of every way in which the individual aspects of our overall price control decisions may be linked.

Cost of Equity

Policy area	Mechanistic interlinkages	In the round interlinkages
Cost of equity	NA	Outputs, ODI calibration, TIM, cost allowances, uncertainty mechanisms.

A3.3 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-2 package, including expectations for output delivery, expenditure allowances, calibration of incentive targets, approaches to determining financial rewards/penalties, levels of expected performance and caps/collars.

A3.4 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 Equity (Expected Returns versus Allowed Returns)

Policy area	Mechanistic interlinkages	In the round interlinkages
Cost of equity (expected returns versus Allowed returns)	NA	Outputs, ODI, Totex allowances, TIM

A3.5 Our decision for the cost of equity includes an adjustment to reflect differences between allowed returns and expected returns, based on our expectation of the scope for outperformance during RIIO-2.⁷⁶

⁷⁶ This has not been done for the ESO for the reasons set out in the ESO Sector Document Finance Chapter

A3.6 Our estimate of the scope for outperformance is informed by historical evidence from energy and other price controls, but the scope for outperformance in RIIO-2 is also affected by our decision on outputs, expenditure allowances and Uncertainty Mechanisms. Any change to the level of outputs to be delivered, expenditure allowances provided or the calibration of Uncertainty Mechanisms may have an impact on the scope for outperformance in the RIIO-2 package.

Cost of debt

Policy area	Mechanistic interlinkages	In the round interlinkages
Cost of debt	NA	Totex allowances, capitalisation rates, depreciation, notional gearing, overall assessment of credit quality (financeability)

A3.7 There are interlinkages between cost of debt calibration and a) Totex allowances, b) capitalisation rates, c) depreciation and d) 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.

A3.8 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-2. This could in turn have an impact on the forecast average costs of debt across GD and T and therefore the appropriateness of the allowance calibration.

A3.9 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	Mechanistic interlinkages	In the round interlinkages
Business Plan incentive	BPI stages (1,2,3 and 4) and TIM incentive rates	BPI Stage 2 and outputs

A3.10 The BPI itself comprises four stages. For those companies to which the BPI applies, we recognise there are interlinkages between these four stages and other elements of the RIIO-2 packages:

A3.11 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.

A3.12 We have decided to accept and reject CVPs as part of Stage 2 of the BPI. We recognise that there are interlinkages between our proposals on the CVP and other outputs. In the event that our proposals on the CVP were to be changed, we may need to reconsider our decision for any outputs linked to the CVPs and associated clawback mechanisms.

A3.13 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 decision for the TIM.

Real Price Effects

Policy area	Mechanistic interlinkages	In the round interlinkages
Real price effects	NA	Cost of Equity, financeability

A3.14 Our decisions for RIIO-2 include an RPE indexation mechanism, which protects companies and consumers from the risks of material deviation between 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.

Ongoing Efficiency

Policy area	Mechanistic interlinkages	In the round interlinkages
Ongoing efficiency	NA	Innovation funding

A3.15 We have identified interlinkages with our decisions for ongoing efficiency and innovation funding. As part of our efficiency challenge for companies, we have considered the scope for ongoing efficiency improvements that can be attributed to innovation funding provided as part of the RIIO-1 price control framework. Our consultants CEPA have undertaken analysis to show that consumers can expect up to 0.2% ongoing efficiency benefits from our innovation funding mechanisms. We agree with CEPA’s analysis.

A3.16 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 value for money offered by innovation funding.

Return adjustment mechanisms

Policy area	Mechanistic interlinkages	In the round interlinkages
Return adjustment mechanisms	NA	TIM, ODIs

A3.17 Our decision to introduce thresholds of 300bps and 400bps around the allowed return on equity is made taking account of the total RIIO-2 package that is proposed within these Final Determinations – considering the TIM and ODI parameters. We believe that it is an appropriate decision in this context. Each of the mechanisms (RAMs, the TIM and ODIs) serves a different purpose and that their combined operation contributes towards the objectives of RIIO-2. We recognise that there are interlinkages between our decisions for RAMs⁷⁷ and our decisions for the TIM and ODI calibration.

⁷⁷ We note that RAMs do not apply to the ESO

Additional funding for the ESO

Policy area	Mechanistic interlinkages	In the round interlinkages
Additional funding for the ESO	NA	Cost of equity, financeability, asymmetry, rules for cost disallowance, incentive value

A3.18 We have decided to include additional funding for the ESO to allow for the risks it faces that are not effectively remunerated through its return on capital. The additional funding amount and cost of equity are strongly linked. They together help ensure the ESO can finance its activities, and avoid duplicative funding for the same risks.

A3.19 As the ESO's risks are a product of its regulatory framework, there are also close links between this value and our framework design choices. In particular, our decisions for costs disallowance and the extent of asymmetric risk they may create, have been considered in conjunction with our proposals on additional funding. We have considered the overall asymmetry of risk and reward in the price control when setting our funding proposals, and our choice of incentive scheme value is another aspect which influences this.