Decision

RIIO-ED2 Final Determinations NPg Annex

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The next electricity distribution price control (RIIO-ED2) will cover the five-year period to 31 March 2028. In December 2021 the Distribution Network Operators (DNOs) submitted their business plans to Ofgem setting out proposed expenditure for RIIO-ED2. We assessed these plans and published our consultation on Draft Determinations in June 2022.

This document and others published alongside it, set out our Final Determinations for companies under the RIIO-ED2 price control, which will commence on 1 April 2023.

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1. Introduction

Purpose of this document

1.1 This document sets out our Final Determinations for the Electricity Distribution (ED) price control (RIIO-ED2) for the areas that are specific to NPg.

1.2 The RIIO-ED2 price control will cover the five-year period from 1 April 2023 to 31 March 2028. All figures are in 2020/21 prices except where otherwise stated.

1.3 The purpose of this document is to focus on those elements of our Final Determinations for the price control settlement which specifically affect NPg's licence areas covering Northern Powergrid: Yorkshire (NPgY) and Northern Powergrid: Northeast (NPgN). This includes:

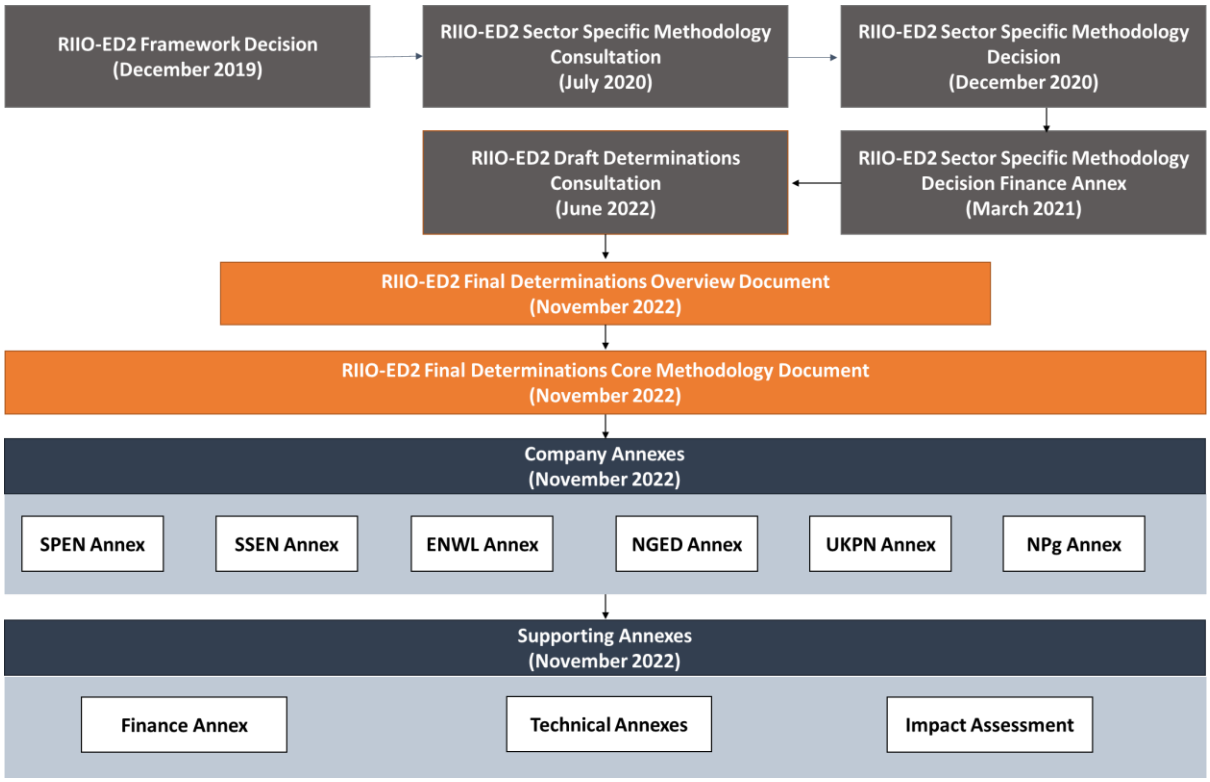
- our assessment of the business plan incentive (BPI), including consumer value propositions (CVPs)
- ex ante cost allowances
- parameters for common outputs
- bespoke Output Delivery Incentives (ODIs)[1]
- bespoke Price Control Deliverables (PCDs)
- bespoke Uncertainty Mechanisms (UMs)
- Network Innovation Allowance (NIA) funding.

1.4 This document is intended to be read alongside the RIIO-ED2 Final Determinations Core Methodology Document and RIIO-ED2 Final Determinations Overview Document.

1.5 Figure 1 sets out where you can find information about other areas of our RIIO-ED2 Final Determinations.

[1] In this document, we refer to 'ODI-F' which is a financial incentive and 'ODI-R' which is a reputational incentive.

Figure 1 Navigating the RIIO-ED2 Final Determinations documents



What are the company specific elements of NPg's Final Determinations?

1.6 This section provides a high-level summary of the elements of our Final Determinations which are specific to NPg.

1.7 Table 1 summarises our assessment of NPg across the four stages of the BPI and where you can find additional information about our decision for each stage.

Table 1 Summary of proposed NPg BPI performance

BPI Stage	Final Determination	Further Detail
Stage 1 minimum requirements	Pass	Overview Document for approach to assessment and rationale
Stage 2 Consumer Value Propositions	No reward	Chapter 2 of this document
Stage 3 Penalty	No penalty	Chapter 3 of this document
Stage 4 Reward	No reward	Chapter 3 of this document

1.8 The cost confidence assessment we have undertaken as part of this process results in a Totex Incentive Mechanism (TIM) incentive rate for

NPg of 49.9%. For further details on the TIM, see Chapter 9 in the Overview Document.

1.9 We present a summary of our ex ante Totex allowances for NPg in Table 2. This reflects our view of efficient costs including ongoing efficiency over RIIO-ED2. For further details, please refer to Chapter 7 of the Core Methodology Document.

Table 2: NPg RIIO-ED2 submitted Totex versus allowed Totex (£m, 2020/21 prices)[2]

Cost activity	RIIO-ED2 submitted	DD (Net Before NPCA[3])	FD (Net Before NPCA)	FD incl Access SCR (Net After NPCA)	Difference to submitted (on a Net Before NPCA basis)
Load related capex	636	506	386	455	-39.4%
Non-load related capex	927	767	830	832	-10.5%
Non-operating capex	157	128	142	137	-9.1%
Network operating costs	587	486	510	521	-13.1%
Closely associated indirects	621	512	613	503	-1.3%
Business support costs	303	250	302	268	-0.4%
Total	**3,231**	**2,650**	**2,782**	**2,717**	**-13.9%**

1.10 The common outputs that we are implementing for all DNOs in RIIO-ED2 are set out in Table 3 with further details provided in the Core Methodology Document. Table 3 also sets out the bespoke outputs that we are applying to NPg in RIIO-ED2 (further details are contained within Chapter 2).

[2] Note that these costs do not include RPEs or post-modelling adjustments for reversing of ongoing efficiency for Worst Served Customers and Visual Amenity, adding in Cyber resilience OT allowances and the Shetland Link RAV transfer, and deducting related party margins, disposals, and other controllable opex.
[3] NPCA stands for Non-Price Control Allocations.

Table 3 Summary of common and bespoke outputs applicable to NPg

Output name	**Output Type**	**Further detail**
Common Outputs		
Annual Environmental Report	ODI-R	Chapter 3, Core Methodology Document
DSO	ODI-F	Chapter 4, Core Methodology Document
Digitalisation Licence Obligation	LO	Chapter 4, Core Methodology Document
Technology Business Management (TBM) taxonomy for classifying digital/IT spend	ODI-R	Chapter 4, Core Methodology Document
Collaborative project with networks to develop a new regulatory reporting methodology	ODI-R	Chapter 4, Core Methodology Document
Smart Optimisation Output	LO	Chapter 4, Core Methodology Document
Customer Satisfaction Survey	ODI-F	Chapter 5, Core Methodology Document
Complaints Metric	ODI-F	Chapter 5, Core Methodology Document
Time to Connect	ODI-F	Chapter 5, Core Methodology Document
Guaranteed standards of performance - Connections	Statutory instrument	Chapter 5, Core Methodology Document
Major Connections Incentive	ODI-F	Chapter 5, Core Methodology Document
Treating domestic customers fairly	LO	Chapter 5, Core Methodology Document
Consumer Vulnerability Incentive	ODI-F	Chapter 5, Core Methodology Document
Annual Vulnerability Report	ODI-R	Chapter 5, Core Methodology Document
Interruptions Incentive Scheme	ODI-F	Chapter 6, Core Methodology Document

Output name	Output Type	Further detail
Guaranteed standards of performance - Reliability	Statutory Instrument	Chapter 6, Core Methodology Document
Network Asset Risk Metric	PCD, ODI-F	Chapter 6, Core Methodology Document
Cyber Resilience Information Technology	PCD	Chapter 6, Core Methodology Document and Confidential DNO Annexes
Cyber Resilience Operational Technology	PCD	Chapter 6, Core Methodology Document and Confidential DNO Annexes
Bespoke NPg Outputs		
NA	NA	NA

1.11 The common UMs that we have decided to put in place for all DNOs in RIIO-ED2 are set out in Table 4 with further details set out in the Overview or in the Core Methodology Document. Bespoke UMs specific to NPg are also set out in Table 4, with further details in Chapter 4.

Table 4 Summary of common and bespoke UMs applicable to NPg

UM Name	UM Type	Further detail	Proposed in DDs
Common UMs			
Cost of Debt	Indexation	Finance Annex, Chapter 2	Yes
Cost of Equity	Indexation	Finance Annex, Chapter 3	Yes
Inflation indexation of RAV and allowed return	Indexation	Finance Annex, Chapter 9	Yes
Real Price Effects	Indexation	Annex 2, Chapter 4 of SSMD	Yes
Bad debt/valid bad debt claims by IDNOs	Pass-through	Finance Annex, Chapter 10	No
Business/Prescribed Rates	Pass-through	Annex 2, Chapter 8 of SSMD	Yes
Ofgem Licence Fee	Pass-through	Annex 2, Chapter 8 of SSMD	Yes

Pension Deficit Repair Mechanism	Pass-through	Annex 2, Chapter 8 of SSMD and Finance Annex, Chapter 10	Yes
Ring Fence Costs	Pass-through	Annex 2, Chapter 8 of SSMD	Yes
Severe Weather 1-in-20	Pass-through	Core Methodology Document, Chapter 7	Yes
Smart Meter Communication Costs	Pass-through	Core Methodology Document, Chapter 7	Yes
Smart Meter Information Technology Costs	Pass-through	Core Methodology Document, Chapter 7	Yes
Supplier of Last Resort	Pass-through	Finance Annex, Chapter 10	No
Transmission Connection Point Charges	Pass-through	Annex 2, Chapter 8 of SSMD and Core Methodology Document, Chapter 7	Yes
Cyber Resilience OT	UIOLI	Core Methodology Document, Chapter 6	Yes
Visual Amenity	UIOLI	Core Methodology Document, Chapter 3	Yes
Worst Served Customers	UIOLI	Core Methodology Document, Chapter 6	Yes
LRE - Low Voltage (LV) Services	Volume driver	Core Methodology Document, Chapter 3	Yes

LRE - Secondary Reinforcement	Volume driver	Core Methodology Document, Chapter 3	Yes
Polychlorinated Biphenyls (PCB)	Volume driver	Core Methodology Document, Chapter 3	Yes
Indirect Scaler	Volume Driver	Overview Document, Chapter 6	No
Coordinated Adjustment Mechanism	Re-opener	Overview, Chapter 5 of SSMD	Yes
Cyber Resilience IT	Re-opener	Core Methodology Document, Chapter 6	Yes
Cyber Resilience OT	Re-opener	Core Methodology Document, Chapter 6	Yes
Digitalisation	Re-opener	Core Methodology Document, Chapter 4	Yes
DSO	Re-opener	Core Methodology Document, Chapter 4	Yes
Electricity System Restoration	Re-opener	Core Methodology Document, Chapter 6	Yes
Environmental	Re-opener	Core Methodology Document, Chapter 3	Yes
High Value Projects	Re-opener	Overview Document, Chapter 6	Yes
LRE	Re-opener	Core Methodology	Yes

		Document, Chapter 3	
Net Zero	Re-opener	Core Methodology Document, Chapter 3	Yes
Physical Security	Re-opener	Core Methodology Document, Chapter 6	Yes
Rail Electrification	Re-opener	Core Methodology Document, Chapter 7	Yes
Storm Arwen	Re-opener	Overview Document, Chapter 6	Yes
Streetwork Costs	Re-opener	Core Methodology Document, Chapter 7	Yes
Tax Review	Re-opener	Finance Annex, Chapter 7	Yes
Wayleaves and Diversions	Re-opener	Overview Document, Chapter 6	No
Bespoke UMs for NPg			
N/A	N/A	N/A	N/A

1.12 Table 5 sets out our NIA allowance for NPg (further details can be found in Chapter 5). Our general approach to the NIA is set out in Chapter 3 of our Core Methodology Document.

Table 5 Summary of NIA applicable to NPg

NPg NIA
£7.5m, to be reviewed by 2025

1.13 Table 6 summarises the financing arrangements that we are applying to NPg. Please refer to Chapter 4 of our Finance Annex for more detail on these areas.

Table 6 Summary of financing arrangements applicable to NPg

Finance parameter	**NPg (NPgY and NPgN) Rate**	**Source**
Notional gearing	60%	See Table 14 in Finance Annex
Cost of equity allowance	5.23%	
Cost of debt allowance	3.07%	
WACC allowance (vanilla)	3.93%	

2. Setting outputs

Introduction

2.1 In this chapter we provide our decisions on:

- The NPg specific parameters for common outputs, detailed in our Core Methodology Document, which we propose to apply to all DNOs.
- The bespoke outputs and CVPs proposed in NPg's Business Plan.

Common outputs

2.2 The NPg specific parameters for the common outputs which we have determined for all DNOs in RIIO-ED2 are set out in the tables below. Further details on these outputs and our decisions are set out in the Core Methodology Document of these Final Determinations.

Interruptions Incentive Scheme (IIS)

2.3 Tables 7 and 8 summarise NPg's unplanned Customer Interruptions (CI) and Customer Minutes Lost (CML). The targets are based on information we have at the time of the FD publication. The final numbers will be set out in SpC 4.4 of the licence.

2.4 The unplanned targets are calculated under a common methodology that uses each DNO's own historical performance to determine their targets, which means they are bespoke for each DNO. This methodology ensures the DNOs are incentivised to improve their performance (or avoid it deteriorating) but recognises that there are factors that will affect each DNO's current performance and the cost and impact of any changes.

2.5 Tables 9 and 10 summarise NPg's planned CI and CML targets.

2.6 Please refer to Chapter 6 of the Core Methodology Document for further details.

2.7 Please refer to Appendix 7 of the Finance Annex for the incentive values, including the IIS revenue cap and collar values for NPgY and NPgN.

Table 7: IIS - unplanned CI targets

Network	2023/24	2024/25	2025/26	2026/27	2027/28
NPgN	46.7	45.7	44.8	43.9	43.1
NPgY	44.3	43.4	42.5	41.7	40.8

Table 8: IIS – unplanned CML targets

Network	2023/24	2024/25	2025/26	2026/27	2027/28
NPgN	38.2	37.4	36.7	35.9	35.2
NPgY	35.5	34.8	34.6	34.4	34.3

Table 9: IIS – planned CI target

Network	2023/24
NPgN	1.35
NPgY	0.93

Table 10: IIS – planned CML target

Network	2023/24
NPgN	2.58
NPgY	1.74

Network Asset Risk Metric (NARM) PCD and ODI-F

2.8 Table 11 summarises NPg's Network Asset Risk Metric (NARM) baseline network risk output for RIIO-ED2. Please refer to Chapter 6 of the Core Methodology Document for further details.

Table 11: NARM PCD and ODI-F – Baseline Network Risk Outputs (£R, 2020/21 prices)

Network	Baseline Network Risk Output
NPgN	391,091,627
NPgY	393,647,413

Consumer Vulnerability Incentive

2.9 Table 12, Table 13 and Table 14 summarise NPg's vulnerability incentive targets for PSR Reach, the value of fuel poverty services delivered and the value of low carbon support services delivered. Financial targets are set out in net present value (NPV). Please refer to Chapter 5 of the Core Methodology Document for further details.

Table 12: Consumer Vulnerability Incentive (ODI-F): PSR Reach target

	Year 2 target	Year 5 target
NPg bespoke target	70%	78%

Table 13: Consumer Vulnerability Incentive (ODI-F): the value of fuel poverty services delivered (NPV, £m)

	Year 2 target	Year 5 target
NPg bespoke target	£9.02m	£10.76m

Table 14: Consumer Vulnerability Incentive (ODI-F): the value of low carbon transition services delivered (NPV, £m)

	Year 2 target	**Year 5 target**
NPg bespoke target	£3.40m	£6.68m

Major Connections Incentive

2.10 Table 15 shows NPg's maximum penalty exposure for the Major Connections Incentive which is a penalty-only ODI-F. Please refer to Chapter 5 of the Core Methodology Document for further details.

Table 15: Major Connections Incentive - maximum penalty exposure

Network	**RIIO-ED2 penalty exposure in base revenue[4]**
NPgN	0.7%
NPgY	0.7%

Bespoke outputs

2.11 For RIIO-ED2, we invited DNOs to propose additional bespoke outputs as part of their business plans reflecting the needs of, and feedback from, their stakeholders and consumers.

2.12 We said that companies were required to support their bespoke proposals with robust justification. In our Business Plan Guidance (BPG), we asked for this justification to ensure that the potential consumer benefits put forward under bespoke proposals were significant enough to merit introducing any additional cost and/or regulatory complexity associated with them.

2.13 Having considered all responses to our Draft Determinations proposals, our decision for each bespoke proposal strikes an appropriate balance between these trade-offs. You can find the background and our assessment approach in our RIIO-ED2 Draft Determinations Overview Document.

2.14 NPg submitted five bespoke outputs. They include one PCD and four CVPs. We provide a summary of each bespoke proposal below, with the full details of each bespoke output put forward by NPg found in its business plan submission. We set out our assessment of each output and detail which of them we decided to accept and apply to NPg in RIIO-ED2.

[4] The penalty is calculated by applying approximately a 0.1% penalty rate per Relevant Market Segment (RMS) within the scope of the incentive, up to a maximum exposure of 0.9% base revenue. Please see Appendix 7 of the Finance Annex for this penalty rate to be translated to RoRE.

Bespoke Output Delivery Incentives

2.15 NPg did not put forward any bespoke ODIs and we will not implement any bespoke ODIs for NPg in RIIO-ED2.

Bespoke Price Control Deliverables

2.16 The table below summarises the bespoke PCD proposal submitted by NPg and outlines our Final Determinations position.

PCD name and description	Consultation response summary	Final Determination	Draft Determination
High voltage automation: NPg's long term programme of investment in high voltage automation to enable faster fault identification and restoration times.	NPg did not object to our position as long as adequate funding is available to meet the level of performance desired by their customers at a cost they are willing to pay.	Reject outright: We have decided to reject the output and the costs associated. The IIS incentivises the DNOs to undertake improvements to reduce the number and duration of interruptions, in order to earn a reward. We do not provide funding for quality of supply (QoS) activities, as there is a likelihood that this would result in a DNO receiving a double benefit by being funded for activities they can earn rewards for undertaking.	Same as FD

Consumer Value Propositions

2.17 The table below summarises the CVP proposals that NPg submitted as part of its business plan and our Final Determinations position in relation to each. Where appropriate, further information setting out the rationale for our decisions is set out under specified headings.

CVP name and description	Consultation response summary	Final Determination	Draft Determination
One-stop app for vulnerable customers: Developing a fully digitalised app for customers in vulnerable situations to make it easier for customers to access a wide range of services.	NPg indicated that they are supportive of our Draft Determinations proposals. One consumer body agreed with our proposals.	Accept with no reward: We recognise the value the app could have in providing more accessible communication channels for customers. However, we do not believe that this CVP goes beyond the vulnerability baseline expectations. Therefore, we have decided not to allow a CVP reward, and that this deliverable should form part of NPG's Vulnerability ODI-F. Given the discrete nature of the activity, the associated costs have been subject to technical assessment rather than benchmarking.	Same as FD
Dynamic voltage optimisation for customer energy efficiency: Dynamically managing voltage on NPg's system to achieve behind the meter benefits through energy consumption reduction.	NPg noted that, should we include the costs associated with this proposal in benchmarked costs, this would diminish its ability to deliver the project. A consumer body agreed with our decision to provide no reward for this CVP.	Accept with no reward: We do not think that NPg has adequately demonstrated the consumer benefits case for their implementation of voltage optimisation in order to receive an award. However, we recognise the benefits for consumers of conservation voltage reduction activities	Same as FD

CVP name and description	Consultation response summary	Final Determination	Draft Determination
		and that further development, alongside reporting to Ofgem on the project's efficacy could help further inform regulation of voltage management technologies. We consider there is value in delivering this proposal. Given the discrete nature of the activity, the associated costs have been subject to technical assessment rather than benchmarking. This is the same approach as was taken at Draft Determinations for this proposal. Please see paragraphs 2.18 to 2.21 below for further details.	
Open Insights – a self-service analytics toolkit: It will bring together the tools customers and stakeholders require to self-serve energy system data, undertake network planning and get LCTs connected.	NPg and a consumer body provided views on our treatment of this CVP. NPg stated that they did not agree with the overall decisions in relation to treatment of their proposed CVPs. They stated that they would need to review and prioritise costs and delivery for this proposal. The consumer body	Accept with no reward: We do not think that this proposal goes beyond what we would expect in relation to the major connections and DSO baseline expectations. In our baseline expectations we have stated that DNOs must provide live network information and have clear and simple application processes in place.	Same as FD

CVP name and description	Consultation response summary	Final Determination	Draft Determination
	respondent stated that they support our Draft Determinations position.	As a result, we have accepted this proposal, but not the proposed reward. Delivery will be tracked through NPg's Major Connections Annual Report. Given the discrete nature of the activity, the associated costs have been subject to technical assessment rather than benchmarking.	
Phase one rollout of next generation energy system: Proposed to rollout 30 innovative microgrid solutions in some of the most remote parts of the network to enhance system resilience.	No consultation response received.	Reject reward and subject cost to benchmarking: We consider the project does not meet the definition of a whole systems solution as a CVP. We also note that there is an ongoing innovation project estimating the value associated which is inconclusive. Although we reject the bespoke nature of the proposal, we consider there is value in carrying out the underlying activity. As we consider the associated costs to be BAU, they are subject to benchmarking.	Same as FD

Dynamic voltage optimisation for customer energy efficiency

Background

2.18 NPg have proposed a CVP for their initiative to use dynamic voltage management on their system to achieve behind the meter benefits through energy consumption reduction. Phase 1 of the project, which concluded in 2021, focused on studies to justify Phase 2, a rollout of the Boston Energy Efficiency Trial technology to optimise voltage on a half-hourly basis.

Final Determination rationale and Draft Determination responses

2.19 We have decided not to provide a reward or attach an output to this CVP, however we do consider that the activity will provide benefits to consumers. Because of the discrete nature of the proposal, the costs for this project are included in the technically assessed category and not subject to cost benchmarking. NPg raised concerns in their response that if the costs for this activity were subject to benchmarking as part of its ex ante allowance, it may prevent delivery of the project.

2.20 Subject to trial results and mitigating any unforeseen complexities by 2025/26, the principle of conservation voltage reduction is recognised to reduce energy consumption and thereby reduce customer bills. However, we believe that a CVP reward is not justified because this initiative risks under-delivery due to projected benefits being subject to the outcome of ongoing trials. Furthermore, there is the chance that NPg's expected reduction in energy consumption could diminish over time due to the uptake of LCTs and further changes in domestic consumption profiles. We believe further evidence is needed to show how voltage optimisation technologies could reduce energy consumption over the long term, how this affects consumer bills and how such technologies could play a role in a future net zero system. A consumer group agreed with our approach to reject the CVP reward and recommended that if such voltage optimisation technologies prove to be beneficial, other DNOs should consider deploying similar technology. NPg did not comment on this concern.

2.21 Because the technology is not yet fully proven, we are also proposing that NPg provides an annual report on the energy consumption reductions delivered by voltage optimisation and the associated cost savings for consumers. We intend to include these reporting requirements in the Regulatory Instructions and Guidance (RIGs).

3. Setting ex ante allowances

Introduction

3.1 This chapter sets out our Final Determinations on ex ante allowances for the different cost areas within NPg's business plan submission. This chapter should be read alongside other parts of our Final Determinations that set out our overall approach to RIIO-ED2.

Ex ante allowances

3.2 Ex ante Totex referenced in this chapter comprises forecast controllable costs and is inclusive of our proposed ongoing efficiency challenge, unless stated otherwise. Furthermore, the figures presented in this chapter do not include real price effects (RPEs) to allow comparison with DNOs' submissions.

3.3 Table 16 and Table 17 compare NPg's submitted ex ante Totex for its network, our Draft Determination proposals, and our Final Determinations position at a disaggregated cost activity level.

Table 16: NPgN RIIO-ED2 submitted Totex versus allowed Totex by cost activity (£m, 2020/21 prices)[5]

Cost activity	RIIO-ED2 submitted	DD (Net Before NPCA)	FD (Net Before NPCA)	FD incl Access SCR (Net After NPCA)	Difference to submitted (on a Net Before NPCA basis)
Connections	26	45	25	42	-4%
New Transmission Capacity Charges	4	3	4	4	-10%
Primary Reinforcement	22	18	14	14	-36%
Secondary Reinforcement	145	87	82	82	-43%
Fault Level Reinforcement	37	30	19	19	-47%
Civil Works Condition Driven	11	9	9	9	-21%
Blackstart	-	-	-	-	0%
Legal & Safety	20	16	13	13	-32%

[5] Note that these costs do not include post-modelling adjustments for reversing of ongoing efficiency for Worst Served Customers and Visual Amenity, adding Cyber resilience OT allowances and the Shetland Link RAV transfer, and deducting related party margins, disposals, and other controllable opex.

Cost activity	RIIO-ED2 submitted	DD (Net Before NPCA)	FD (Net Before NPCA)	FD incl Access SCR (Net After NPCA)	Difference to submitted (on a Net Before NPCA basis)
QoS & North of Scotland Resilience	8	-	-	-	-100%
Flood Mitigation	3	2	1	1	-43%
Physical Security	-	-	-	-	0%
Rising and Lateral Mains	4	4	4	4	-10%
Overhead Line Clearances	13	11	15	15	10%
Losses	-	-	-	-	0%
Environmental Reporting	22	18	19	19	-15%
Operational IT and Telecoms	36	29	34	34	-5%
Worst Served Customers	1	1	1	1	-10%
Visual Amenity	5	4	5	5	-5%
Diversions (excl Rail)	28	23	20	21	-29%
Diversions Rail Electrification	-	-	-	-	0%
Civil Works Asset Replacement Driven	10	8	10	10	6%
Asset Replacement NARM	150	122	133	133	-11%
Asset Replacement Non-NARM	88	72	85	85	-3%
Asset Refurbishment Non-NARM	21	17	20	20	-8%
Asset Refurbishment NARM	4	3	5	5	37%
IT and Telecoms (Non-Op)	36	30	34	32	-7%
Non-Op Property	8	7	7	7	-11%
Vehicles and Transport (Non-Op)	16	13	15	15	-10%

Cost activity	RIIO-ED2 submitted	DD (Net Before NPCA)	FD (Net Before NPCA)	FD incl Access SCR (Net After NPCA)	Difference to submitted (on a Net Before NPCA basis)
Small Tools and Equipment (STEPM)	14	11	9	9	-35%
HVP RIIO-ED2	-	-	-	-	0%
Shetland	-	-	-	-	0%
Tree Cutting	22	18	18	18	-16%
Faults	119	97	98	103	-17%
Severe Weather-1-in-20	4	-	-	-	-100%
Occurrences Not Incentivised (ONIs)	29	24	24	25	-18%
Inspections	14	12	12	12	-18%
Repair and Maintenance	39	32	32	32	-18%
Dismantlement	2	1	1	1	-51%
Remote Generation Opex	-	-	-	-	0%
Substation Electricity	6	5	5	5	-10%
Smart Metering Roll Out	2	2	2	2	-13%
Total Closely Associated Indirects (CAI)	289	235	271	224	-6%
Total Business Support	140	114	133	121	-4%
Cost Activities Sub-Total	1,398	1,123	1,180	1,142	-16%
Excluded Cost Activities	-12	-	-	-	-100%
Total Totex (modelled component)	1,386	1,123	1,180	1,142	-15%
Technically Assessed Totex	7	6	7	6	-6%
Total Totex	**1,393**	**1,129**	**1,186**	**1,149**	**-15%**

Table 17: NPgY RIIO-ED2 submitted Totex versus allowed Totex by cost activity (£m, 2020/21 prices)[6]

Cost activity	RIIO-ED2 submitted	DD (Net Before NPCA)	FD (Net Before NPCA)	FD incl Access SCR (Net After NPCA)	Difference to submitted (on a Net Before NPCA basis)
Connections	33	62	30	81	-11%
New Transmission Capacity Charges	-	-	-	-	0%
Primary Reinforcement	43	36	34	34	-21%
Secondary Reinforcement	305	206	164	164	-46%
Fault Level Reinforcement	22	19	14	14	-36%
Civil Works Condition Driven	19	16	15	15	-19%
Blackstart	-	-	-	-	0%
Legal & Safety	27	23	19	19	-30%
QoS & North of Scotland Resilience	53	-	-	-	-100%
Flood Mitigation	3	3	2	2	-44%
Physical Security	-	-	-	-	0%
Rising and Lateral Mains	9	7	8	8	-9%
Overhead Line Clearances	9	8	10	10	8%
Losses	-	-	-	-	0%
Environmental Reporting	24	20	20	20	-17%
Operational IT and Telecoms	52	43	55	55	6%
Worst Served Customers	3	3	3	3	-9%
Visual Amenity	5	4	4	4	-14%
Diversions (excl Rail)	32	27	22	24	-30%

[6] Note that these costs do not include post-modelling adjustments for reversing of ongoing efficiency for Worst Served Customers and Visual Amenity, adding Cyber resilience OT allowances and the Shetland Link RAV transfer, and deducting related party margins, disposals, and other controllable opex.

Cost activity	RIIO-ED2 submitted	DD (Net Before NPCA)	FD (Net Before NPCA)	FD incl Access SCR (Net After NPCA)	Difference to submitted (on a Net Before NPCA basis)
Diversions Rail Electrification	-	-	-	-	0%
Civil Works Asset Replacement Driven	14	12	13	13	-9%
Asset Replacement NARM	177	148	151	151	-15%
Asset Replacement Non-NARM	86	72	83	83	-4%
Asset Refurbishment Non-NARM	34	29	33	33	-4%
Asset Refurbishment NARM	9	7	10	10	9%
IT and Telecoms (Non-Op)	36	30	37	35	4%
Non-Op Property	6	5	6	6	9%
Vehicles and Transport (Non-Op)	17	14	15	15	-9%
Small Tools and Equipment (STEPM)	15	13	11	11	-29%
HVP RIIO-ED2	-	-	-	-	0%
Shetland	-	-	-	-	0%
Tree Cutting	32	26	26	26	-18%
Faults	178	149	163	168	-8%
Severe Weather-1-in-20	6	-	-	-	-100%
Occurrences Not Incentivised (ONIs)	61	51	54	55	-11%
Inspections	19	16	17	17	-10%
Repair and Maintenance	49	41	45	45	-10%
Dismantlement	2	1	1	1	-48%

Cost activity	RIIO-ED2 submitted	DD (Net Before NPCA)	FD (Net Before NPCA)	FD incl Access SCR (Net After NPCA)	Difference to submitted (on a Net Before NPCA basis)
Remote Generation Opex	-	-	-	-	0%
Substation Electricity	10	8	9	9	-9%
Smart Metering Roll Out	4	3	3	3	-22%
Total Closely Associated Indirects (CAI)	332	277	342	279	3%
Total Business Support	164	136	168	148	3%
Cost Activities Sub-Total	1,888	1,514	1,588	1,560	-16%
Excluded Cost Activities	-59	-	-	-	-100%
Total Totex (modelled component)	1,829	1,514	1,588	1,560	-13%
Technically Assessed Totex	9	7	8	8	-6%
Total Totex	**1,838**	**1,521**	**1,596**	**1,568**	**-13%**

Technically assessed costs

3.4 For technically assessed costs, we have made the following adjustments, listed in Table 18 below. Our view of bespoke proposals is presented in Chapter 2.

Table 18: Technically Assessed Costs (£m, 2020/21 prices)

Proposal name	Submitted	DD[7]	FD	Confidence
CVP: One-stop App solution for	1.8	-	1.8	High

[7] DD and FD figures are gross costs and do not include efficiency challenge.

Proposal name	Submitted	DD[7]	FD	Confidence
vulnerable customers				
CVP: Self-service analytics toolkit	6.3	6.3	6.3	High
CVP: Dynamic voltage optimisation for domestic energy efficiency	7.5	7.5	7.5	Lower

Engineering Justification Paper review

Overview

3.5 Our review of NPg's Engineering Justification Papers (EJP), and the associated supporting information, is one of several assessment tools that has contributed to our overall assessment of NPg's submission and its proposed costs and volumes. The positions set out in this section should be considered in the wider context of the cost assessment methodology set out in Chapter 7 of the Core Methodology Document.

3.6 Following our review of EJPs in accordance with paragraph 2.23 of the Engineering Justification Papers for RIIO-ED2 Guidance document[8], our review of Draft Determination consultation responses and additional material provided by NPg, this section sets out our engineering assessment as part of our Final Determinations.

3.7 As discussed in Chapter 7 of our Core Methodology Document, our assessment provides a view on each EJP that was assigned one of three outcomes: Justified, Partially, or Unjustified.

3.8 A summary of our review of NPg's EJPs is presented in Table 19, showing the number of EJPs in each category and how our overall assessment has changed between Draft and Final Determinations. We have provided more detail in Appendix 1 on EJPs of significant value where our review determined the EJP to be Partially Justified or Unjustified, noting instances where we have changed our EJP review position as part of our Final Determinations.

[8] RIIO ED2 Engineering Justification Paper Guidance https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/riio_ed2_engineering_justification_paper_guidance.pdf

3.9 We intend to work with DNOs and other stakeholders to identify additional and enhanced reporting requirements to improve our ongoing monitoring and review of DNOs' performance and delivery of their outputs in period. We set out some potential examples of areas where we will consider enhanced reporting in Appendix 2.

Table 19: Summary of our review of NPg's EJPs

EJP Review Outcome (Count of EJPs)	Final Determinations	Draft Determinations
Justified	41	24
Partially Justified	19	24
Unjustified	1	13
Total EJPs	61	61

Load Related Expenditure (LRE): Draft Determination responses and Final Determination rationale

3.10 Chapter 7 of the Core Methodology Document details the interactions between our engineering review of the LRE EJPs and the activity level assessment of LRE.

3.11 NPg provided additional information in relation to a number of LRE EJPs which we deemed to be Unjustified at Draft Determinations due to a lack of evidence in relation NPg's compliance with Engineering Recommendation P2/7 (P2/7).[9] Based on the additional information, we now consider each of these EJPs to be either Partially Justified or Justified and agree that some form of intervention will be required to maintain network integrity, as well as to ensure P2/7 compliance in RIIO-ED2. However, in some instances, the need to undertake these works within RIIO-ED2 was not sufficiently evidenced. In these circumstances we have deemed these EJPs to be Partially Justified. For EJPs where the need to intervene within RIIO-ED2 has been sufficiently evidenced, we have deemed these to be Justified.

3.12 Please see Appendix 1 for further detail on our assessment of the LRE EJPs.

Non-Load Related Expenditure (NLRE): Draft Determination responses and Final Determination rationale

3.13 For NLRE investments, NPg provided a significant amount of asset information following Draft Determinations, to support its original submission, which clarified a number of the concerns that we raised as part of our Draft Determinations.

3.14 In relation to NLRE, and specifically on NARM related expenditure, NPg provided further information relating to its RIIO-ED1 performance and the

[9] Engineering Recommendation P2/7 ENA_EREC_template_v1.0 (dcode.org.uk)

impact that the introduction of the Common Network Asset Indices Methodology (CNAIM) has had on its asset management.

3.15 In its response concerning non-linear assets NPg set out clear and consistent needs cases which synchronised with the optioneering volumes selected. The proposals on linear assets were not evidenced to the same level as non-linear assets, where there was more reliance on modelling of volumes. We note the information provided on LV and HV Cables was comprehensive.

3.16 NPG provided new information on their Wood Pole programmes, which addressed some of the concerns that we raised within our Draft Determinations.

3.17 Please see Appendix 1 for further detail on our assessment of the NLRE EJPs.

TIM

3.18 Our updated cost confidence assessment results in a proposed Totex Incentive Mechanism (TIM) incentive rate for NPg of 49.9%. For further details on the TIM, see Chapter 9 of the Overview Document.

BPI Stage 3

3.19 We have decided that NPg does not incur any penalty following our BPI Stage 3 assessment. This is the same approach that we proposed at Draft Determinations.

3.20 NPg stated that it had no material comments in response to this question. We continue to consider that NPg has not submitted any lower confidence costs. We have therefore decided that NPg will not incur a Stage 3 penalty.

BPI Stage 4

3.21 We have decided that NPg will earn no reward following our BPI Stage 4 assessment. This is the same approach that we proposed at Draft Determinations.

3.22 NPg stated that it had no material comments in response to this proposal. We consider that the approach set out at Draft Determinations is appropriate and have therefore decided to retain our proposed position.

3.23 The table below sets out our decisions on high confidence cost categories and allowances (before the application of RPEs and ongoing efficiency).

Table 20: Final Determinations on Stage 4 (£m, 2020/21 prices)

Cost Category	NPG's view	Ofgem view	BPI reward
Modelled Costs	3,213.6	2,994.7	N/A

Bespoke Outputs and Technically Assessed	15.6	15.3	N/A

4. Adjusting ex ante allowances for uncertainty

Introduction

4.1 In this chapter we set out our Final Determinations position on bespoke UMs.

4.2 We set out more detail on the common UMs in our Core Methodology Document and Overview Document, including our broader Final Determinations position and rationale.

Bespoke UM Proposals

4.3 In our SSMD we invited the DNOs to propose bespoke UMs with suitable justification in their business plans. When assessing those we have considered the extent to which the supporting information provided by the DNOs justifies the key criteria outlined in the BPG:

- materiality and likelihood of the uncertainty
- how the risk is apportioned between consumers and the network company
- the operation of the mechanism
- how any drawbacks may be mitigated to deliver value for money and efficient delivery.

4.4 NPg did not put forward any proposals for bespoke UMs in its business plan. Accordingly, we are not proposing to implement any bespoke UMs for NPg in RIIO-ED2.

5. Network Innovation Allowance

Introduction

5.1 Our SSMD and the Core Methodology Document set out the criteria that we have used to assess NIA funding requests. The Core Methodology Document also details our Final Determination position for the RIIO-ED2 NIA Framework and extension of the existing Strategic Innovation Fund to the DNOs.

5.2 NPg in its business plan submission proposed it should be awarded £25m of NIA over 5 years, equivalent to £5m per year, which is approximately £1m more than its maximum annual allowance in RIIO-ED1.

Final Determination

Parameter	Final Determination	Draft Determination
Level of NIA funding	£7.5m, to be reviewed at the latest by 2025.	Same as FD.

Final Determination rationale and Draft Determination responses

5.3 We have decided to confirm NPg's NIA as proposed at Draft Determinations. NPg's award is equivalent to three years' worth of £2.5m annually, which equates to 0.4% of its average annual RIIO-ED1 base revenue.

5.4 NPg was the only stakeholder that commented on the NIA proposed for it. It disagreed with our approach of linking allowances to DNOs' size, which results in lower allowances for smaller DNO groups such as NPg. Its reasoning and our response are summarised in the Core Methodology Document of our Final Determinations.

5.5 NPg also stated that reducing its annual innovation funding request by half was a mistake, at a time when innovation for decarbonisation and consumers in vulnerable situations is essential.

5.6 At Draft Determinations, we stated that we were not satisfied that NPg has in place a robust process to measure and monitor benefits of innovation projects, ahead of rolling out solutions to BAU. Following our Draft Determinations, NPg submitted some examples of benefit calculations and associated explanatory methodology notes to demonstrate how it monitors benefits of innovations. We welcome this, but the evidence presented does not clearly demonstrate and explain the process NPg applies earlier in the innovation journey before the roll-out to BAU. We maintain that such a procedure to monitor the benefits of ongoing and recently completed innovation projects before roll-out to BAU is required as part of a robust process to identify which innovations to roll out.

5.7 In its Draft Determination response, NPg did not provide additional reasoning and evidence for why it requires more NIA than in RIIO-ED1.

5.8 NPg also commented on our approach to sourcing evidence used to assess it against the five SSMD criteria. In its response, NPg stated that this assessment was partly based on evidence submitted to an informal request for information rather than through the business plan submission and supplementary question process. We do not consider this to be relevant, because in our SSMD we set out that we would assess any relevant information alongside RIIO-ED2 business plans to award companies with a NIA.

Appendix 1 Key Engineering Recommendations

A1.1 This section provides additional details regarding our assessment of specific EJPs.

A1.2 Due to the high number of EJPs presented within the submission, we have focused on EJPs of significant value where our Draft Determinations review determined the EJP to be Partially Justified or Unjustified.

Table 21: LRE - Key Engineering Recommendations

EJP	Final Determinations	Draft Determinations
EJP-11.1: HV/LV Network Reinforcement	Partially Justified NPg provide a subsection that outlines their response to the engineering review decision on this EJP, however it refers to an introductory section of the full response that provides a high-level explanation on the deliverability plans for multiple assets in RIIO-ED2. This does not relate to the specific EJP and does not provide sufficient information to move the EH decision. Due to a lack of specific and relevant information, the Draft Determinations position remains.	Partially Justified The extent of the needs case was dependent on LCT uptake and flexibility markets maturing. The optioneering options were considered in line with general industry trends, however the delivery rate for RIIO-ED2 was significantly higher compared to RIIO-ED1. Accordingly, we considered that this presented a delivery risk.
EJP-11.23: EHV Reinforcement 20 – Wetherby Phase 2	Justified We note that Phase 1 is being delivered through the RIIO-ED1 Green Recovery Scheme and, in line with the Ofgem decision made in May 2021[10], phase 2 should be considered as part of NPg's RIIO-ED2 Business Plan. This was not previously highlighted as part of our Draft Determinations. We are satisfied with the investment case linked to the Green Recovery Scheme decision, and deem this EJP to be justified.	Unjustified The needs case for this EJP was to build a new primary substation in anticipation of EV charging load growth around Wetherby Motorway Service Area on the A1. The EJP presented limited information as to why this investment was needed within the proposed timeframe rather than at a later date, potentially being ahead of need. Due to limited information as to why this investment was needed within the proposed timeframe rather than at a later date, we considered there to be a potential risk of this investment being

[10] Decision on the RIIO-ED1 Green Recovery Scheme https://www.ofgem.gov.uk/publications/decision-riio-ed1-green-recovery-scheme

		ahead of need with no clear consumer value.
EJP-11.22: EHV Reinforcement 19 - Hebburn & Wardley	Justified NPg have presented information that specifies the need for this works, and how it is considered across all DNOs and the models. We recognise the long term benefits this work will bring consumers. We deem this EJP to be Justified.	Unjustified The qualitative needs case was considered justified and it was clear that 6kV HV assets were unlikely to play a role in future "net zero ready" networks, however there was little quantitative analysis presented to justify the need for investment, although reduction in losses was estimated. No detailed information was presented regarding LCT or Distributed Energy Resource (DER) interest in this area. Asset-based interventions were considered for the optioneering which was considered robust and delivery was proposed for RIIO-ED2 years 3-5. Due to limited information presented to fully justify the investment, such as no detailed information regarding LCT or DER interest in the area, we considered there to be a potential risk of this investment being ahead of need.
EJP-11.12: EHV Reinforcement 9 – Holme Upon Spalding Moor and Southgate	Partially Justified We note the additional information provided by NPg in relation to these EJPs. Based on our review of this additional information, we now consider these EJPs to be Partially Justified. We note that for these EJPs, we agree that some form of intervention will be required to maintain network integrity, as well as to ensure P2/7 compliance. However, the need to undertake these works within RIIO-ED2 has not been sufficiently evidenced, and therefore, we have deemed these EJPs to be Partially Justified.	Unjustified It was not clear exactly what compliance issue is driving the need for reinforcement. The sites were declared as currently being P2/7 compliant and the forecast peak demand growth presented would not result in the group categorisation changing in the RIIO-ED2 period. The options presented did address the long-term needs, but these needs appeared to materialise well after RIIO-ED2 and without sufficient justification why investment should occur in RIIO-ED2.

EJP-11.4: EHV Reinforcement 1-Beverly 132/33kV		Due to not having sufficient justification why the investment must be delivered in RIIO-ED2 rather than a later date, we considered there to be a potential risk of this investment being ahead of need.
EJP-11.18: EHV Reinforcement 15 - Ripon	Justified We note the additional information provided by NPg. We agree that the intervention will be required to maintain network integrity, as well as to ensure P2/7 compliance, and that the intervention will be required within RIIO-ED2. Therefore, we have deemed this EJP to be Justified.	

Table 22: NLRE (Non-NARM) - Key Engineering Recommendations

EJP	**Final Determinations**	**Draft Determinations**
EJP-2.1: Distribution Substations - Plant	Partially Justified – Accept Submitted Volumes We note the additional information provided by NPg, which suggests that the works need to be delivered. However, we do not believe that the risks that we previously identified have been sufficiently addressed – we have not been provided with sufficient evidence to confirm that the interventions can be completed as planned and efficiently. There remains uncertainty in relation to the deliverability and the proposed volumes. Therefore, the EJP is Partially Justified and an additional reporting mechanism is required.	Partially Justified The needs case for some level of intervention was clearly based on NARM metrics and condition data snapshots provided. Optioneering had limited discussion of interactions between NPg's reinforcement-related replacements as well as the influence of potential future flexibility on the proposed volumes. There was a significant increase in the proposed number of plant items replaced and substation replacement, when compared to RIIO-ED1. NPg stated that the framework contract that it had in place would cover this increase, however no further supporting information was provided.

		We did not believe sufficient detail on the large increase in volumes had been provided. We therefore considered that there was a risk related to the proposed volume and its deliverability.
EJP 3.1b: Major Substations - Plant (Switchgear)	Justified Sufficient information and evidence have been provided by NPg to address the risks that we had previously highlighted. The EJP is Justified.	Partially Justified The needs case was considered justified as there would be an ongoing need for asset health related replacement of switchgear and a CNAIM19 based approach had been followed. However, the EJP was relatively generic and had proposed a higher volume compared to RIIO-ED1. Due to the EJP being relatively generic and having an increased volume compared to RIIO-ED1, we considered that there was a risk related to the proposed volume and its deliverability.
EJP 4.1b: HV Overhead Lines	6.6/11kV OHL (Conventional Conductor) & 20kV OHL (Conventional Conductor): Justified We note that sufficient information has been provided to justify the proposed investment in relation to these assets. 6.6/11kV Poles & 20kV Poles: Partially Justified – Accept Submitted Volumes We maintain the view that there are risks associated with the efficient delivery of these volumes. Therefore, additional reporting will be required.	Partially Justified The needs case and volumes were well-explained, however there was limited detail on the consideration of alternative options, as well as overall deliverability, especially as the proposed volumes double from RIIO-ED1. We viewed that the responses to SQs did not contain enough specific detail on how NPg will ensure efficient delivery of these assets during RIIO-ED2. Due to the proposed volumes doubling from RIIO-ED1 and limited detail on how NPg will ensure efficient delivery of these assets during RIIO-

		ED2, we considered that there is a risk related to the proposed volume and its deliverability.
EJP 3.1a: Major Substations - Plant (Transformers)	Justified Sufficient information and evidence have been provided by NPg to address the risks that we had previously highlighted. The EJP is Justified.	Partially Justified The EJP presented a clear optioneering section with relevant data used to justify decisions along with a discussion of prioritisation and delivery strategy. However, the EJP had limited specific details on how transformers had been chosen for intervention. Response to an SQ provided some additional details on strategy, including a sample of assets identified for intervention. However, some of the assets (eg Linton 66kV) included insufficient justification for intervention. Due to some of the assets having insufficient justification for intervention, we considered that there was a risk related to the need and timing for some of these interventions
EJP 4.2: EHV and 132kV Wood Pole and Mast Overhead Lines	33kV OHL (Pole Line) Conductor & 66kV OHL (Pole Line) Conductor: Justified We note that sufficient information has been provided to justify the proposed investment in relation to these assets. 33kV Poles & 66kV Poles: Partially Justified – Accept Submitted Volumes We maintain the view that there are risks associated with the efficient delivery of these volumes. Therefore, we	Partially Justified The needs case and volumes were well-explained, however there was limited detail on the consideration of alternative options, as well as overall deliverability, especially as the proposed volumes doubled from RIIO-ED1. We viewed that the responses to SQs did not contain specific enough details on how NPg would ensure efficient delivery of these assets during RIIO-ED2. Due to the proposed volumes doubling from RIIO-ED1 and

	note that additional reporting will be required.	limited detail on how NPg will ensure efficient delivery of these assets during RIIO-ED2, we considered that there was a risk related to the proposed volume and its deliverability.
EJP 4.1a: LV Overhead Lines	LV Main (OHL) Conductor & LV Service (OHL): Justified We note that sufficient information has been provided to justify the proposed investment in relation to these assets. LV Poles: Partially Justified – Accept Submitted Volumes We maintain the view that there are risks associated with the efficient delivery of these volumes. Therefore, we note that additional reporting will be required.	Partially Justified The needs case was considered sufficient, however insufficient justification was presented for the proposed volumes. The volumes are circa four times greater than those of RIIO-ED1. Responses to SQs on volumes and deliverability were relatively generic and did not contain specific details on how NPg would ensure efficient delivery of these assets during RIIO-ED2. Due to the EJP being relatively generic and having an increased volume compared to RIIO-ED1, we considered that there was a risk related to the proposed volume and its deliverability.
EJP 1.3c: EHV and 132kV Cables (solid)	Justified Sufficient information and evidence have been provided by NPg to address the risks that we had previously highlighted. The EJP is Justified.	Partially Justified The needs case was considered justified and a very detailed optioneering section was presented. However, it was not clear how the final volumes were derived (various factors/data sources were discussed). Response to an SQ provided some further clarity on volume derivation, however the detail provided was considered insufficient to fully justify the volumes. Due to insufficient detail being provided to justify the proposed volumes, we

		considered that there was a risk related to the proposed volume and its deliverability.

Table 23: NLRE (NARM) - Key Engineering Recommendations

EJP	Final Determinations	Draft Determinations
EJP-1.3a: EHV and 132kV Cables (oil)	Justified Sufficient information and evidence have been provided by NPg to address the risks that we had previously highlighted. The EJP is Justified.	Partially Justified NPg presented a sufficient needs case for the investment, based on asset health and the associated risks. The submission included detailed optioneering, providing justification for the strategy that NPg proposed to pursue in RIIO-ED2. However, it was not clear how NPg derived the final volumes included within the submission, nor was sufficient evidence provided to demonstrate that these volumes were economic and efficient. We believed that insufficient data was used to justify the proposed volumes. We therefore considered that there was a risk related to the proposed volume.
EJP-10.1: HV Network Automation	Partially Justified Insufficient additional information has been provided to justify the investment. We maintain our view that there is a risk associated with the efficient delivery of the proposed volumes.	Partially Justified NPg presented a sufficient needs case for the investment, which was predicated on its ability to increase the levels of HV remote control and automation across the network, delivering an improvement in reliability. Sufficient optioneering was provided within the submission. However, the volumes proposed within the submission had a high degree of uncertainty, and insufficient evidence was

		used to fully justify the proposed volumes. We considered that there was a risk related to the high uncertainty and insufficient evidence associated with the proposed volumes.
EJP-7.1: Clearances	Partially Justified Insufficient additional information has been provided to justify the investment. We maintain our view that there is a risk associated with the efficient delivery of the proposed volumes.	Partially Justified NPg provided sufficient detail on the needs case for the works, noting the legal and safety requirements associated with overhead line clearances, and the risks that would be mitigated through this investment. The optioneering was high-level, but sufficient detail was provided to justify the balance between ESQCR compliance, as well as efficient investment. The submission did not include sufficient justification for the proposed volumes. NPg recognised that its data was limited, but provided insufficient assurances on how they had addressed this within the proposal, in particular when considering the increase in volumes when compared to RIIO-ED1. We did not believe that the proposed volumes had been sufficiently justified at this stage. We therefore considered that there was a risk related to the proposed volume.
EJP-8.3: PCBs	Partially Justified Insufficient additional information has been provided to justify the investment. We maintain our view that there is a risk	Partially Justified NPg provided sufficient detail on the needs case for the works, noting the legal requirements associated with the removal of

	associated with the efficient delivery of the proposed volumes.	polychlorinated biphenyls. In terms of optioneering, the submission included appropriate discussion of intervention types and an overview of different options in terms of volumes. However, at this stage, insufficient justification was provided in relation to how the pole mounted transformer volumes had been determined. In addition, insufficient detail had been provided on how deliverability risks will be mitigated. We did not believe that the proposed volumes had been sufficiently justified at this stage. We therefore considered there was a risk related to the proposed volume.
EJP-11.3: Looped Services	Partially Justified Insufficient additional information has been provided to justify the investment. We maintain our view that there is a risk associated with the efficient delivery of the proposed volumes.	Partially Justified NPg clearly set out the potential issues arising from looped services. It was considered a credible assumption that the application of LCT technologies would increase resulting in a greater number of looped services becoming overloaded. The proposed approach of continuing to assess on an application-by-application basis was considered pragmatic. Due to increased forecast of LCT applications the volume of interventions increases significantly compared to RIIO-ED1, however limited information was provided on how delivery of the increased volumes would be managed or how costs and volumes would be managed in the event that requirements exceed the 2% forecast.

		We did not believe that the delivery management of the proposed volumes had been sufficiently justified, hence there was a perceived risk associated with delivering the proposed volumes.
EJP-10.2: LV Network Automation	Partially Justified We note the additional information included within NPg's consultation response, including the details provided on future fault management, and its interactions with LV network automation. However, we believe that there remains a risk in relation to the efficient delivery of the proposal, noting that the benefits may not be realised. Therefore, the EJP remains as Partially Justified.	Partially Justified NPg took a proactive approach to predictive LV fault monitoring and management to improve LV network performance. A clear needs case was presented based on fault rate for NPg's licence areas, which was higher than industry median mainly due to legacy cable technology choices. The proposed approach was based on a significant scale up of an earlier trial which would also require changes to behaviours in how faults are managed. There was a risk related to how quickly the proposed investment could be scaled up and the changes in behaviours that would be required to deliver and realise the benefits.

Appendix 2 Examples of Enhanced Reporting

Category	**Asset Category**	**Volumes (Additions)**	**Relevant reported lines**	**Potential monitored outcomes**
LV, HV & EHV Poles	LV Poles	20,483	No. of assets replaced	Improving network safety and reliability Improving network resilience, in particular for storms
	6.6/11kV Poles	14,030		
	20kV Poles	5,892		

Category	Asset Category	Volumes (Additions)	Relevant reported lines	Potential monitored outcomes
	33kV Pole	3,120		
	66kV Pole	3,892		
LV & HV Switchgear	LV Circuit Breaker	50	No. of assets replaced	Addressing defective batches of assets
	LV Pillar (ID)	801	Sites addressed	Replacement of the large
	LV Pillar (OD at Substation)	210	based on safety concerns	ageing population which have
	LV Board (WM)	500		reached obsolescence
	6.6/11kV CB (GM) Secondary	5		with minimal support from the Original Equipment Manufacturer
	6.6/11kV Switch (GM)	0		Facilitation of full remote control at
	6.6/11kV RMU	1,402		some sites, enabling modern
	20kV CB (GM) Secondary	0		protection and communication systems
	20kV Switch (GM)	0		Removal of oil and SF6 Circuit
	20kV RMU	77		Breakers from the network.
HV Transformers	6.6/11kV Transformer (GM)	1,178	No. of assets replaced MVA added	Replacement of ageing fleet
	20kV Transformer (GM)	94		Increased ratings with modern equivalent

Category	Asset Category	Volumes (Additions)	Relevant reported lines	Potential monitored outcomes
				Reduction in network losses Assets with modern tap changers