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Making a positive difference for energy consumers

Consultation

RIIO-2 Draft Determinations – National Grid Electricity Transmission			
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Our aim for the RIIO-2 price controls is to ensure energy consumers across GB get better value, better quality of service and environmentally sustainable outcomes from their networks.

In May 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 have now assessed these plans. This document, and others published alongside it, set out our Draft Determinations for company allowances under the RIIO-2 price controls, for consultation. We are seeking responses to the questions posed in these documents by 4 September 2020. Following consideration of responses we propose to make our Final Determinations at the end of the year.

This document outlines the scope, purpose and questions of the consultation and how you can get involved. Once the consultation is closed, we propose to consider all responses. We want to be transparent in our consultations. We propose to publish the non-confidential responses we receive alongside a decision on next steps on our website at Ofgem.gov.uk/consultations. If you want your response – in whole or in part – to be considered confidential, please tell us in your response and explain why. Please clearly mark the parts of your response that you consider to be confidential, and if possible, put the confidential material in separate appendices to your response.

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1. Introduction and overall package

Purpose of this document

1.1 This document sets out our Draft Determinations and consultation positions for the electricity transmission (ET) price control (RIIO-ET2) for the areas that are specific to NGET. This price control will cover the five-year period from 1 April 2021 to 31 March 2026. All figures are in 2018/19 prices except where otherwise stated.

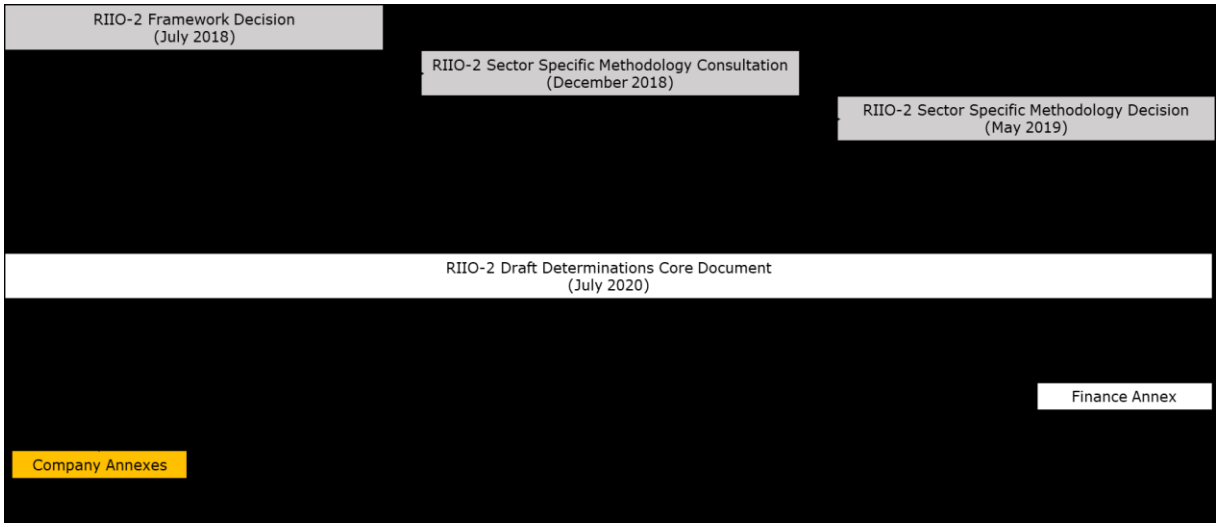
1.2 Setting Allowed Revenue is underpinned by a large set of proposals across output design, cost assessment, and finance. The purpose of this document is to focus on NGET and:

- Support stakeholders in navigating the individual proposals across the suite of RIIO-2 Draft Determinations Documents that make up its overall allowed revenue; and
- Set out any proposals that are specific to NGET, including:
  - baseline cost allowances;
  - parameters for common outputs;
  - bespoke Output Delivery Incentives (ODIs)[1];
  - bespoke Price Control Deliverables (PCDs);
  - bespoke Licence Obligations (LOs);
  - Consumer Value Propositions (CVPs);
  - Uncertainty Mechanisms (UMs);
  - the level of Network Innovation Allowance (NIA); and
  - reward or penalty under the Business Plan Incentive (BPI).

1.3 This document is intended to be read alongside the RIIO-2 Draft Determinations Core Document (Core Document) and RIIO-2 Draft Determinations - Electricity Transmission Sector Annex (ET Annex). Figure 1 below sets out where you can find information about other areas of our RIIO-2 Draft Determinations.

[1] ODIs can be reputational (ODI-R) or financial (ODI-F).

Figure 1: RIIO-2 Draft Determinations documents map



What makes up NGET's Draft Determinations (the RIIO-2 building blocks)?

1.4 We have structured our price control consultation positions around a series of building blocks. The building blocks reflect how we set companies' Allowed Revenue. The table below provides stakeholders with a map to where to find the proposals that make up the Draft Determinations.

Table 1: RIIO-2 Building Blocks

Building Block		Where to find the Draft Determinations	
		Approach/Methodology	Company-specific parameters
Base Revenue (BR)	Legacy items from previous controls including RIIO-1 RAV and close-out adjustments	Chapter 11 of the Regulatory Finance Annex	Chapter 2 of ET Annex
	Common ODIs, PCDs & LOs	Chapter 4 of the Core Document	Chapter 2 of ET Annex
	Bespoke ODIs, PCDs & LOs	Chapter 4 of the Core Document	Chapter 2
	Baseline Totex Allowance	Chapter 5 of Core Document	Chapter 3 of ET Annex
	Capitalisation Rate (Fast/Slow Money)	Chapter 11 of Regulatory Finance Annex	
	WACC Allowance	Chapter 6 of Core Document Chapter 4 of Regulatory Finance Annex	
	Depreciation Allowance	Chapter 10 of Regulatory Finance Annex	

Building Block		Where to find the Draft Determinations	
		Approach/Methodology	Company-specific parameters
	Tax Allowance	Chapter 7 of Regulatory Finance Annex	
	Innovation	Chapter 8 of Core Document	Chapter 5
	Cyber and Physical security	Chapter 7 of the Core Document	
Adjustments to BR for company performance	Totex Incentive Mechanism (TIM)	Chapter 10 of the Core Document	Chapter 1
	Network Asset Risk Metric (NARM)	Chapter 4 of the Core Document Appendix 3 of the NARM Annex	Chapter 2 of ET Annex
	BPI Reward/Penalty	Chapter 10 of Core Document	Chapter 1
	Return Adjustment Mechanism (RAM)	Chapter 8 of the Regulatory Finance Annex	
Rules to adjust BR for other factors	Uncertainty Mechanisms (including Pass-through)	Chapter 7 of the Core Document	Chapter 3
	Policy Indexation (RPE, ongoing efficiency)	Chapter 5 of the Core Document	
	Other Indexation (RAV, CoE, CoD)	Chapter 9 of the Regulatory Finance Annex	
	Whole System Mechanisms	Chapter 7 and 8 of the Core Document	
	Pensions	Chapter 11 of the Regulatory Finance Annex	
	Directly Remunerated Services (DRS)	Chapter 11 of the Regulatory Finance Annex	

An overview of NGET's RIIO-2 price control

1.5 A summary of our proposed position for NGET's baseline totex is presented in Table 2. This reflects our view of efficient costs that we propose will form NGET's baseline totex allowance for RIIO-ET2 price control period. We have set baseline totex allowances for NGET 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 the work. For further details of any values, please refer to Chapter 3 of this document.

Table 2: NGET's baseline funding request and Ofgem's proposals

Cost area	NGET-proposed allowance (£m)	Ofgem-proposed allowance (£m)
Load Related Capex	1115.6	891.0

Cost area	NGET-proposed allowance (£m)	Ofgem-proposed allowance (£m)
Non-Load Related Capex	2650.9	744.1
Non-op capex	376.9	175.4
Network Operating costs	1174.6	549.0
Indirect opex	1509.4	1062.1
Other costs	263.0	158.0
Efficiency challenge	-	(248)
Totals	**7090.3**	**3331.6**

1.6 The common outputs that we are proposing for all companies in RIIO-ET2 are set out in Table 3, with further details in the ET Annex. Table 3 also sets out the bespoke outputs that we are proposing for NGET (further details are in Chapter 2 of this document).

Table 3: Proposed common and bespoke outputs applicable to NGET

Output name	Output type	Further detail
Common outputs across ET Sector		
Meeting the needs of consumers and network users		
Energy Not Supplied (ENS)	ODI-F	ET Annex Chapter 2
Quality of connections survey	ODI-F	ET Annex Chapter 2
Timely connections	ODI-F	ET Annex Chapter 2
Stakeholder Survey for New Transmission Infrastructure Projects	ODI-R	ET Annex Chapter 2
Maintaining a safe and resilient network		
Large Project Delivery (LPD)	ODI-F	ET Annex Chapter 2
Network Asset Risk Metric (NARM)	PCD	NARM Annex
Network Access Policy (NAP)	LO	ET Annex Chapter 2
Cyber resilience	UIOLI, PCD	Core Document Chapter 7
Delivering an environmentally sustainable network		
Environmental Action Plan (EAP) and annual environmental report	ODI-F, ODI-R, PCD, LO	ET Annex Chapter 2
Insulation and Interruption Gas (IIG) leakage	ODI-F	ET Annex Chapter 2
Visual amenity in designated areas provision	PCD	ET Annex Chapter 2
Bespoke outputs to NGET		
Environmental Scorecard	ODI-F	Chapter 2
Network reinforcements	PCD	Chapter 2
Maintaining security of supply as the energy system changes	PCD	Chapter 2
Facilitating the closure of conventional generation	PCD	Chapter 3

Output name	Output type	Further detail
Reducing carbon emissions from operational transport	PCD	Chapter 2
SF6 asset intervention	PCD	Chapter 2
Maintaining network risk (NLR)	PCD	Chapter 3
Facilitating competition	PCD	Chapter 3
Physical security	PCD	Chapter 3
Optimising with the Distribution Network Operators (DNOs)	PCD	Chapter 3
Optimising with the ESO	PCD	Chapter 3
Connecting generation customers	LO	Chapter 3
Connecting demand customers	LO	Chapter 3

1.7 The cross-sector and ET UMs that we are proposing for all companies in RIIO-ET2 are set out in Table 4. Table 4 also sets out the bespoke UM that we propose for NGET (further detail is in Chapter 4 of this document).

Table 4: Proposed common and bespoke UMs applicable to NGET

UM Name	UM type	Further detail
Cross-Sector UMs		
Ofgem Licence fee	Pass-through	Core Document
Business rates	Pass-through	Core Document
Inflation indexation of RAV and allowed return	Indexation	Core Document
Cost of debt indexation	Indexation	Core Document
Cost of equity indexation	Indexation	Core Document
Real Price Effects	Indexation	Core Document
Tax liability allowance	Re-opener	Core Document
Pensions (pension scheme established deficits)	Re-opener	Core Document
Physical security	Re-opener	Core Document
Cyber resilience IT	Re-opener	Core Document
Cyber resilience OT	Re-opener	Core Document
Information Technology and Telecoms (IT&T)	Re-opener	Core Document
Net Zero	Re-opener	Core Document
Coordinated Adjustment Mechanism	Re-opener	Core Document
Common UMs across ET Sector		
Opex escalator	Indexation	ET Annex
Generation and Demand connections	Volume Driver	ET Annex
Shunt Reactors	Volume Driver	ET Annex
Large Onshore Transmission Projects (LOTI)	Re-opener	ET Annex
Pre-Construction Funding (PCF)	Re-opener	ET Annex
Medium Sized Investment Projects (MSIP)	Re-opener	ET Annex
Visual amenity in designated areas provision	Re-opener	ET Annex
UM bespoke to NGET		

UM Name	UM type	Further detail
Net-zero carbon capital construction	UIOLI allowance	Chapter 4

1.8 Table 5 sets out our NIA proposals for NGET (further details can be found in Chapter 5 of this document). Our general approach to the NIA is set out in the Core Document.

Table 5: Summary of NIA applicable to NGET

Consultation position
£49.3m NIA, conditional on an improved industry-led reporting framework.

1.9 Table 6 below summarises our assessment of NGET against the BPI, and sets out where you can find additional detail.

Table 6: Summary of proposed NGET BPI performance

BPI Stage	Proposed outcome	Further detail
1	Fail - NGET failed numerous Minimum Requirements, which cumulatively had a material impact on our ability to assess its Business Plan. Penalty of £16.7m (0.5% of totex)	Core Document for approach to assessment and rationale.
2	NGET not eligible for a reward under BPI Stage 2 due to failure at BPI Stage 1. In the event that our position on NGGT's Stage 1 outcome changes because of this consultation, we have provided our views on NGET's CVPs in Chapter 2.	Core Document for approach to assessment. Chapter 2 of this document for views on specific proposals.
3	Penalty of £179.6m	Core Document for approach to assessment. Chapter 3 of this document for specific views on NGET performance.
4	NGET not eligible for a reward under BPI Stage 4 due to failure at BPI Stage 1.	Core Document for approach to assessment. Chapter 3 of this document for specific views on NGET performance.
Cap calculation	Total penalty before cap: £196.2m Proposed NGET totex: £3331.6m Maximum BPI penalty (2% of totex): £66.6m	Core Document sets out detail on application of 2% cap

BPI Stage	Proposed outcome	Further detail
	NGET penalty reduced to £66.6m to reflect maximum BPI penalty.	
Overall	**Penalty of £66.6m**	Core Document

1.10 Table 7 below summarises our proposed Totex Incentive Mechanism (TIM) rate for NGET. Further details about TIM can be found in the Core Document.

Table 7: Proposed TIM rate for NGET

NGET TIM rate
39.2%

1.11 Table 8 below summarises the financing arrangements that we are proposing to apply to NGET and the ET sector as a whole. Please refer to the RIIO-2 Draft Determinations - Regulatory Finance Annex (Finance Annex) for more detail on these areas.

Table 8: Summary of financing arrangements applicable to NGET

Finance parameter	NGET rate	Source
Notional gearing	55%	See Table 31 in Finance Annex
Cost of Equity	3.93%	
Expected outperformance	0.22%	
Allowed return on equity	3.70%	
Allowed return on debt	1.74%	
Allowed return on capital	2.63%	

2. Setting Outputs

Introduction

2.1 In this chapter we provide our views on two main areas:

- Firstly, we set out the NGET-specific parameters for the outputs, detailed in our ET Annex, which we propose to apply to the ET sector as a whole.
- Secondly, we set out our views on the bespoke outputs that NGET proposed in its Business Plan and any bespoke outputs that we propose to apply to NGET.

Common outputs

2.2 The NGET-specific parameters for the common outputs, which we are proposing for all companies in RIIO-ET2, are set out in Table 9. Further details on these outputs are set out in the ET Annex.

Table 9: NGET parameters for common outputs

Output name	Output type	Parameters
Meeting the needs of consumers and network users		
Energy Not Supplied (ENS)	ODI-F	Baseline target - 147MWh Incentive rate - £16,000/MWh (same for all TOs) Financial collar - 3% of baseline revenue (same for all TOs)
Quality of connections survey	ODI-F	We propose to consult on this in the first year of RIIO-2.
Timely connections	ODI-F	Baseline target - 100% compliance Incentive rate - -0.5% of base revenue (maximum penalty cap)
New Transmission Infrastructure Projects	ODI-R	N/A - identical reporting requirements across all TOs, see ET Annex.
Maintaining a safe and resilient network		
Large Project Delivery (LPD)	ODI-F	We're proposing to finalise specific LPD parameters on a project-by-project basis.
Network Asset Risk Metric (NARM)	PCD	Please refer to NARM Annex.
Network Access Policy (NAP)	LO	N/A - Identical requirement for all TOs, see ET Annex.
Delivering an environmentally sustainable network		
Environmental Action Plan (EAP) and annual environmental report	ODI-R, LO	ODI-R for science -based targets for BCF reductions. Multiple EAP

Output name	Output type	Parameters
		commitments in other impact areas - please refer to ET Annex.
Insulation and Interruption Gas (IIG) leakage	ODI-F	Target-based symmetrical Financial ODI. Company targets to be confirmed at Final Determinations.
Visual amenity in designated areas provision	PCD	Total expenditure cap of £465m for all TOs.

Bespoke outputs

2.3 For RIIO-2, we invited companies to propose additional bespoke outputs as part of their Business Plans reflecting the needs of and feedback from their stakeholders and consumers.

2.4 We expected companies to support bespoke proposals with robust justification to ensure that the potential consumer benefits were reasonable, given the additional cost and/or regulatory complexity introduced into the price controls. In making our Draft Determinations for RIIO-2 outputs, we have sought to strike a balance between these trade-offs for each bespoke proposal. You can find the background and our assessment approach in our Core Document.

2.5 In this section, we provide our views on all of the bespoke outputs that NGET proposed in its Business Plan, and any that we propose to apply to NGET.

2.6 For full details on the bespoke proposals, refer to NGET's Business Plan submission.

Bespoke Output Delivery Incentives

2.7 The table below summarises the bespoke ODI proposals that NGET submitted as part of its Business Plan and outlines our consultation position.

Table 10: NGET's bespoke ODI proposals

Output name and description	Consultation position
Environmental Scorecard: NGET proposed an ODI-F to reward/penalise its performance in seven environmental areas compared to an annual target improvement in each area.	**Accept:** See further down this chapter.
Accelerating low carbon connections: NGET proposed an ODI-F to incentivise it to deliver shorter connection lead times to get new generation onto the network more quickly.	**Reject:** See further down this chapter.
RIIO-T2 System Outage Management Proposals to Reduce Constraint Costs: This was a joint ODI-F proposal from the Transmission Owners (TOs) and Electricity System Operator (ESO) for a four-staged approach to implementing a TO 'on demand service' which will provide flexibility to the ESO.	**Reject**: See further down this chapter
Outage management: NGET proposed an ODI-F to incentivise it to continually improve how it plans for and carries out vital repair work on the network with the least disruption to customers and stakeholders.	**Reject:** We are proposing to reject this ODI because we note that this customer group (customers affected by outages) has been captured in the Quality of Connections target audience and common milestones. We have worked with the TOs to collectively develop the common milestones and trigger points at which we propose the survey will be issued and the target audience that this survey will capture. We consider that NGET will be sufficiently incentivised to improve vital repair work services through our proposed Quality of Connections common ODI-F (for further information, please see the ET Annex).

Accept: Environmental Scorecard

Environmental Scorecard ODI-F	
Purpose:	To incentivise NGET to outperform selected RIIO-2 targets in its Environmental Action Plan (EAP).
Benefits:	NGET will further reduce its carbon emissions, improve the environment and reduce its resource use for the benefit of existing and future consumers.

Background

2.8 In its Business Plan, NGET proposed a bespoke ODI-F to reward/penalise its performance in the following seven environmental areas compared to an annual target in each area.

a) Adoption rate of alternative vehicles
b) Percentage reduction in business travel CO2e emissions
c) Operational and office waste recycling rate
d) Percentage reduction in office waste
e) Percentage reduction in office water use
f) Percentage increase in environmental value of non-operational land
g) Percentage biodiversity net gain in every new construction project

2.9 NGET proposed that the ODI-F would apply each year to hold NGET to account for delivering annual targets in RIIO-ET2; and to encourage NGET to deliver environmental improvements before the end of RIIO-ET2.

2.10 The ODI-F would compare actual annual performance metric in an area to specified annual targets and performance thresholds that NGET has proposed in each area. Performance would be scored depending on the level of under or out-performance in each area. NGET propose that the metrics are weighted equally such that the scores in each area would be added together to obtain an overall score which would be used to calculate the level of penalty or reward. NGET proposed to cap the maximum reward and penalty at +/-£4m per annum.[2]

Consultation Position

Output parameter	Consultation position
Mechanism design	We propose to accept the basic design of NGET's proposed ODI-F environmental scorecard, subject to resolving the issues discussed in this table.
Scope and weighting	We consider that three metrics relating to waste, recycling and resource use would be over-represented in the ODI-F if NGET's proposed weighting approach is applied to them. Therefore, we propose to reduce the weight on each of these three metrics by two thirds (see paragraph 2.11).
Target	The alternative fuel vehicle adoption rate proposed by NGET is not a direct measure of environmental performance. We propose to re-specify the metric to target a reduction in the CO2 emissions from operational transport (see paragraph 2.12).
Incentive rate	NGET's proposed incentive rate (see paragraph 2.6) is not sufficiently justified. We propose to recalibrate the incentive applied in the ODI-F so that it represents good value for money for consumers (see paragraph 2.13). Our proposed options are: • Equating the incentive to the economic value of the disbenefit / benefit arising from the performance level in each area; or • Equating the incentive to the delivery costs plus a margin.

[2] See pages 16 to 22 in NGET's Output Delivery Incentive annex of its RIIO-ET2 Business Plan for full details of the bespoke ODI-F proposal annual targets, scoring system and the calculation of the penalty or reward.

Rationale for Consultation Position

2.11 We propose to accept NGET's proposal for an ODI-F environmental scorecard. Subject to resolving the issues discussed in paragraphs 2.15 to 2.18, we consider that an ODI-F would ensure NGET has a financial interest, proportionate with its involvement and effort, in achieving or exceeding the RIIO-2 targets set out in its EAP.[3]

2.12 We consider several features of the mechanism design to have merit. For example, NGET has proposed a symmetric reward / penalty mechanism, with quantifiable metrics, clearly time-bound baseline targets, and a dead-band range. The latter feature would help to increase confidence that a performance outturn that exceeds the penalty or reward thresholds is due to the company's actions (or lack of these).

2.13 We are also satisfied that the RIIO-2 targets that NGET has proposed in its EAP for metrics a), b), f) and g) (listed in paragraph 2.4) are a step change in ambition compared to RIIO-1, and are at least comparable to or exceed those of its peers, and other external benchmarks. NGET would not be rewarded under the ODI-F for achieving the RIIO-2 targets in its EAP, however it would receive a penalty if, on balance, it under-performed across the different metrics compared to the targets. Conversely, it would only receive a reward if it out-performed, on balance, across the seven metrics.

2.14 However, we have several concerns with NGET's proposal. First, we consider that the metrics c), d) and e) (listed in paragraph 2.4) would be over-represented in the ODI-F if NGET's proposed weighting approach is applied. This is because the proposed metrics only represent a small proportion of NGET's total waste and resource use.[4] Although achieving the targets in this area would have a positive impact, it would be relatively small in comparison to NGET's overall environmental footprint. In addition, we have low confidence that the targets and thresholds for reducing office water use, and office and operational waste are appropriate because of the lack of historical data and external benchmarking supporting these targets. To address these issues, we are proposing to reduce the weight on the three metrics in the ODI-F by two thirds. This means that the three categories

[3] For further detail on its EAP targets see NGET's Environmental Action Plan.
[4] For example, office and operational waste is less than six per cent of NGET's total annual waste by weight.

would each have a weight of one third, with a total weighting of 1 in the impact area when the three areas are summed together.

2.15 Second, the alternative fuel vehicle (AFV) adoption rate target, metric a) in paragraph 2.4, is not a direct measure of environmental performance. We think that the metrics adopted in the environmental scorecard should measure the impact on the environment of the TO's network activities rather than measure the amount of inputs NGET has deployed to address adverse impacts. To address this issue, we propose to re-specify this metric as a reduction target for CO2 emissions from operational transport compared to 2018/19 levels. The proposed overall target for the end of RIIO-ET2 targets would be a 54% reduction in CO2 emissions from operational transport compared to 2018/19 levels. We propose to look to finalise the annual targets and penalty and reward thresholds for Final Determinations.

2.16 Third, the proposed incentive rate does not appear to provide good value for consumers. If we assume that over the five years of RIIO-2 NGET achieved the Reward Threshold 2 in metric a) and b), and met the Annual Target and final RIIO-2 target in every other metric, it would receive a total reward of £5m in RIIO-2. This would equate to a reward of approximately £1,500k per tCO2e abated in operational transport, and £5,000 per tCO2e abated in business travel. Both of these rewards would considerably exceed the non-traded cost of carbon, which has an average value of £73/tCO2e over RIIO-2.[5]

2.17 We propose that the incentive rate needs to be recalibrated so that it represents good value for money for consumers. The two options we are consulting on are:

- Setting the incentive rate to the economic value of the disbenefit / benefit arising from a change of performance in each area. For example, valuing the difference in the level of tCO2 emissions between the target and the first or second penalty/reward performance threshold in either operational transport or business travel emission if NGET's actual performance is comparable. The main benefit of this option is that NGET would deploy efficient actions to improve its performance where it can do so at a cost that is less than or equal to the value of the benefit. The disadvantage of this approach is that

[5] We calculated the average value over RIIO-2 using the central estimate of non-traded carbon prices for years 2022-2026 in data table 3 of the UK Government's Green Book supplementary guidance: valuation of energy use and greenhouse gas emissions for appraisal.

monetised values for the environmental benefits of some of the metrics are not readily available or known.

- Another option would be to set the incentive with reference to the efficient costs of mitigating an impact, ie the abatement cost plus a margin. The advantage of this option is that it is possible to set a financial incentive for NGET to realise additional environmental benefits, at a reasonable cost to consumers.[6] The disadvantage of this approach is that it is not equivalent to the marginal social cost of the environmental impact. Therefore, it would not be a good indication to the company of consumers' relative priorities for reducing environmental impacts.

2.18 Applying either of the options above, or even a combination of the two, would result in an ODI-F with multiple incentive rates that are specific to either one or more of the metrics. While this would add some complexity, we consider that it would improve the overall value for money for consumers of the proposed ODI-F.

2.19 We also considered whether to extend NGET's bespoke ODI-F to the other electricity TOs, effectively making this a common ODI-F. However, we are not proposing to do this because only in a few cases have the other electricity TOs included comparable RIIO-2 targets in their EAPs.

Consultation questions

NGETQ1. Do you agree that an Environmental Scorecard ODI-F would be in the interests of existing and future consumers?

NGETQ2. Do you support our proposed changes to NGET's Environmental Scorecard proposal?

<u>Reject: Accelerating low carbon connections</u>

Background

2.20 NGET's proposed ODI-F would set the baseline target as the connection date agreed between NGET and the customer[7], which NGET noted could be given independent assurance by the ESO and NGET's User Group. NGET explained that

[6] The challenge of monetising environmental impacts includes methodological issues such as representing concepts of environmental thresholds and limits and non-substitutability of natural resources.
[7] NGET have provided technology specific average lead times, however, they note that there can be customer specific issues that can affect the agreed lead time.

there is no relevant RIIO-ET1 performance data due to the lack of any customer request for acceleration of connection.

2.21 NGET proposed this to be an upside-only incentive. The reward would be calculated as the carbon abatement achieved by the low-carbon generation in the months of advanced connection, based on the BEIS short-term traded carbon values.[8] NGET also proposed a cap on rewards of 1% of base revenue.

Consultation position

2.22 We propose to reject NGET's accelerating low carbon connection ODI.

Rationale for consultation position

2.23 We think that it would be difficult to set a meaningful and challenging baseline for this incentive, due to the lack of relevant historical or independently verifiable evidence.

2.24 We also think that it would be challenging to differentiate the effect of a TO's genuine effort to accelerate connection from the effect of additional contingency built into the original date. We do not think that the ESO or the User Groups would have the tools to safeguard against the risk of additional contingency being built into these connection dates.

2.25 A core activity of a TO's operations is meeting the general needs of its customers and delivering timely connection dates. On the basis of the information we have at this time, we do not consider it appropriate for a regulatory ODI to replace what should be better managed through individual commercial processes.

2.26 In addition, we note that the Quality of Connections Incentive should drive TOs to manage the connections process to meet its customers' needs, which includes delivering connections earlier, where appropriate.

Consultation questions

NGETQ3. Do you agree with our proposal to reject the Accelerating Low Carbon Connections ODI-F?

[8] Please see the BEIS short term traded carbon values here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/794186/2018-short-term-traded-carbon-values-for-appraisal-purposes.pdf

Reject: RIIO-T2 System Outage Management Proposals to Reduce Constraint Costs

RIIO-T2 System Outage Management Proposals to Reduce Constraint Costs	
Purpose	A four-staged approach, including an ODI-F, which could allow the TOs to provide extra flexibility to the ESO through optimising outage management.
Benefits	This incentive proposal is intended to minimise constraint costs.

Background

2.27 In May 2020, in light of feedback that we provided after the Business Plan submissions, all three TOs and the ESO submitted a joint paper outlining proposals related to reducing constraint costs through optimising system outage management. This set out a four-staged approach that intends to provide additional flexibility to the ESO in minimising constraint costs, as follows:

- Stage 1: Streamline the administrative process for SO-TO code procedure (STCP) 11.4 to make it quicker and easier to complete.[9]
- Stage 2: Introduce a common ODI-F from year 1 of RIIO-T2 for TOs to identify and progress asset-based solutions using STCP 11.4.
- Stage 3: Report on the forecast constraint cost savings and solutions provided under STCP 11.4 by the TOs in order to demonstrate consumer benefits.[10]
- Stage 4: Trial an "on-demand service" with a defined budget, which could be provided through the Network Innovation Allowance (NIA) for TOs to take this forward.

Consultation position

2.28 We are proposing to reject the above proposals relating to additional funding or incentives to minimise constraint costs.

Rationale for consultation position

2.29 The TOs have identified barriers in the use of STCP 11.4, which they propose to resolve under this four-staged incentive proposal.[11] We encourage the TOs and the ESO to continue discussions on how to resolve the barriers that they have

[9] STCP11.4 is a new procedure which provides a £1.5m pot of funding for the ESO to pay the TOs to recover any costs incurred through modifying their fixed outage plans. Please see further information on STCP11.4 here: https://www.nationalgrideso.com/industry-information/codes/system-operator-transmission-owner-code-stc-old/modifications/pm0108

[10] The TOs note that this information could be reported to the User groups and events such as the OC2 Forum.

[11] For example, the TOs note that the STCP processes are slow and burdensome.

identified, and to utilise the existing STC modification process, where appropriate, in order to explore any possible changes to STCP 11.4 through the STCP panel process. [12]

2.30 We have not seen sufficient evidence to support the need for an ODI to encourage the use of STCP 11.4 at this time.[13] We note that this STCP was recently introduced and we do not think that there has been sufficient time to understand the impact that STCP 11.4 will have. We intend to monitor the use of STCP 11.4 through the KPIs that have been included in the NAP proposal put forward by the TOs for RIIO-2; KPI 11 in particular.[14] These KPIs will enable us to better understand TO outage management and the use of tools such as STCPs over RIIO-2.

2.31 We consider that stage 3, as outlined by the TOs, will be sufficiently supported through the NAP KPIs.

2.32 In addition, in our Sector Specific Methodology Decision (SSMD), we decided that the NIA would primarily focus on energy system transition and addressing consumer vulnerability. We do not think that this proposal falls within the scope of NIA.[15]

Consultation questions

NGETQ4. Do you agree with our consultation position to reject the 'RIIO-T2 System Outage Management Proposals to Reduce Constraint Costs'?

Bespoke Price Control Deliverables

2.33 The table below summarises the bespoke PCD proposals that NGET submitted as part of its Business Plan and outlines our consultation position.

[12] As set out in here: https://www.nationalgrideso.com/industry-information/codes/system-operator-transmission-owner-code-stc/modifications
[13] We think that this proposal has similarities to SPT's Whole System ESO TO Constraint Mitigation ODI proposal, which we are proposing to reject. We have set out rationale for this consultation position in our SPT Annex.
[14] Please see the ET sector annex for further information on the NAP.
[15] SSMD Core Document, paragraph 10.54

Table 11: NGET's bespoke PCD proposals

Output name and description	Consultation position
Network reinforcements: NGET proposed to innovate and invest in the network reinforcements indicated by the ESO's NOA process, increasing boundary capability by 22.5GW to facilitate a changing energy market and keep costs down. This PCD had a value of £507.1m	**Accept:** See Chapter 3.
Maintaining security of supply as the energy system changes: NGET proposed to invest £31.1m in protection and control coordination studies, changes required to maintain security of supply and identify future requirements as renewables increase..	**Accept:** See Chapter 3.
Facilitating the closure of conventional generation: NGET proposed to invest £134.7m to facilitate closure of conventional generation and secure easements to maintain access and minimise costs..	**Accept:** See Chapter 3.
Reducing carbon emissions from operational transport: NGET proposed to purchase and maintain 60% of their fleet as low-carbon vehicles, including installing and maintaining substation charging for them. PCD value £47.5m	**Accept:** See further down this chapter, renamed 'Electric Vehicles and charging infrastructure' PCD.
SF6 asset intervention (NLR): NGET proposed a UM to fund a large-scale programme of intervention works on network assets containing and leaking SF6.	**Accept**: See further down this chapter. We are proposing to reject the bespoke proposal for a UM. However, we propose to set a PCD with baseline funding for an SF6 asset intervention plan.
Facilitating competition: NGET proposed to deliver pre consents for projects which may be applicable for Ofgem's late competition model. PCD value £181.5m	**Accept:** See Chapter 3. We propose to accept this PCD and will work with NGET to set defined outputs for Final Determinations. Adjusted to £74.6m
Optimising with the Distribution Network Operators (DNOs): NGET proposed a £30.7m PCD to optimise with DNOs by identifying whole system opportunities, establishing an ongoing process and investing in five reactor units.	**Accept:** We note that the need case for these works has been well explained and cost breakdown of works has been well defined. We believe that there is a risk that some works may be deferred from T2, we therefore propose a PCD to manage this risk across the named sites. Our cost assessment has removed £5.5m from Baseline.
Optimising with the ESO: NGET proposed an allowance of £48.026m CAPEX and £2.325m OPEX, for the installation and operation of new system monitoring equipment.	**Accept:** NGET presented a well justified needs case for this proposal. We do have concerns over the limited cost analysis and flat spend programme provided, this limits our analysis in determining the efficiency of the proposal as we cannot fully ascertain the scope of the

	interventions. We therefore consider that a PCD is required to manage this capex risk. Our cost assessment has removed £7.7m from Baseline. We have allowed the operation costs proposed in OPEX, £2.325m.
Net-zero capital carbon: NGET proposed a £2.5m PCD for offsetting the emissions it cannot eliminate technically or cost effectively	**Accept as a bespoke UM:** See Chapter 4.
Black Start capability: NGET proposed, in addition to baseline funding, further funding of £22.2m for proposed changes driven by new or updated industry codes and guidance which have not been published at the time of submission of NGET's Business Plan.	**Reject:** We are proposing to reject this PCD because we believe the proposal is not detailed or evidenced to a sufficient level to enable our review or approval. We are instead proposing that all Black Start works, including the requested baseline funding that we are proposing to reject, can be assessed through the MSIP re-opener. See the ET Annex for further detail.
Protection from extreme weather: NGET proposed £59.8m to undertake works to protect substations and routes from flood risk to the new ETR 138 standard.	**Reject:** The scope of works within the proposal is not sufficiently developed to allow us to determine if the proposals within the PCD are reasonable. For substation sites c.70% of the named sites had no scope consideration at all; for overhead routes the scope described has significant overlap with other baseline requests and we could not ascertain the boundaries between the proposals.
A resilient operational telecommunication infrastructure: NGET proposed a £241m PCD to continue to develop a low-risk operational telecoms infrastructure. This includes the replacement of 1,850km of fibrewrap and telecoms equipment at 274 sites.	**Reject:** We do not fully accept the need case for Optel Refresh works at present. We have concerns over the deliverability of the proposal and NGET have not fully explained the interaction or dependency on condition related reliability issues that they state exist. While we agree that an Optel Refresh will ultimately be required, we do not accept that NGET have the made the case for this be completed during RIIO-2. As such, we propose baseline funding for only the final two years of RIIO-2 is provided to enable NGET to begin this work.
Substation equipment (NLR): NGET proposed to include a number of non-lead substation assets categories in a monetised risk system and commit to a risk reduction.	**Reject:** We are proposing to reject this as, in our view, the underlying level of data NGET presently holds is not sufficient to enable monetised risk to be fully considered.
Protection and Control (NLR): NGET proposed a monetised risk system and committing to a risk reduction for Protection and Control equipment.	**Reject:** We propose to reject this as, in our view, the work scope is uncertain. We propose to fund the system studies required to ascertain the correct scope of works.
Protection and Control Coordination (LR): NGET proposed defined study and replacement works for Protection and Control Coordination equipment.	**Reject:** We propose to reject this as, in our view, the work scope is uncertain. We propose to fund the system studies required to ascertain the correct scope of works. We consider the funding for relevant P&C work in Chapter 3.

Overhead line (OHL) steelwork replacement (NLR): NGET proposed a £53m PCD to deliver an equivalent of 350t of steelwork replacement in the RIIO-T2 period.	**Reject:** We are proposing to reject this as we have significant concerns around the classification of tower steel work grade 4. In addition, we believe that the recovery of grade 4 steel could lead to a significant over-funding.
OHL steelwork refurbishment (NLR): NGET proposed a £92m PCD to refurbish the equivalent of 4,427km^2 of steelwork refurbishment	**Reject:** As with the OHL Steelwork replacement PCD, we are proposing to reject this as we have significant concerns around the classification of tower steel work grade 4. In addition, we believe that the recovery of grade 4 steel in combination with the new Tower Paint used by NGET could lead to a significant unjustified outperformance.

Consultation questions

NGETQ5. Do you agree with our proposals on the PCDs? If no, please outline why.

Accept: Electric Vehicles and charging infrastructure

Electric Vehicles and charging infrastructure PCD	
Purpose	To facilitate the rollout of EVs and EV charging infrastructure during RIIO-2
Benefits	Reduced carbon emissions from NGET's operational transport

Background

2.34 All TOs made proposals through their EAPs to convert some or all of their fleet of vehicles to EVs during RIIO-2 to reduce their business carbon footprints[16].

2.35 NGET requested a PCD for £47.49m, which included allowances for its EV fleet, its non-EV fleet, EV charging infrastructure and all associated opex costs.

Approach to assessment

2.36 EV costs are common across all sectors but differing approaches proposed by network companies in their Business Plans meant that we were unable to take a common approach to assess these costs. Hence, we undertook an assessment of NGET's proposal individually.

2.37 We carried out a qualitative assessment of NGET's EV proposals to assess the justification for the proposed fleet replacement, making sure the proposals had

stakeholder support and that NGET had fully considered the costs, environmental impact of the proposal and any alternative options. We then did a comparative assessment of EV proposals from all the network companies, with the aim of identifying an efficient unit cost for EVs that we could use to assess NGET's cost and volume assumptions.

2.38 Due to the different types of EV required on different networks, the different ways companies procure their fleets, the large variance in proposed unit costs, and the inherent uncertainty around future EV costs, we were unable to establish a common EV unit cost[17].

2.39 With regards to assessing NGET's charging infrastructure proposal, we note that significant EV charging infrastructure has not been installed on the networks to date. Consequently, we do not have reliable historical information on the associated costs and volumes in order to assess NGET's charging infrastructure proposals. Therefore, we qualitatively assessed NGET's proposal for charging infrastructure to ensure the estimated costs are in within the range of similarly-sized capex projects, the size of the infrastructure investment is proportionate to NGET's network's requirements, and the infrastructure provides sufficient coverage so as not to impact on NGET's operational performance.

2.40 NGET submitted its EV operational expenditure (opex) costs and non-EV fleet capex costs as part of a single PCD alongside the EV and EV charging infrastructure costs. We do not consider it necessary to attach a PCD to these costs as there is less uncertainty around them and instead propose to provide baseline funding for these.

Consultation position

Output parameter	Consultation position
Description and purpose of the deliverable	499 EVs. Charging infrastructure at 234 sites.
Performance metrics	Volume delivered
Expected timing of delivery	End of RIIO-2
Totex baseline allowances	£26.74m (£15.32m EV Capex; £11.41m charging infrastructure)
Accountability mechanism	Annual regulatory reporting
Proposed approach to allowance clawback	Automatic return for volume not delivered

[17] See para 2.52

Rationale for consultation position

2.41 We propose to set a PCD for £26.74m for NGET to transition 60%[18] of its fleet to EVs (£15.32m), and to install 234 charging points on its network (£11.41m). In the event of NGET delivers less than the target volumes of 499 EVs and charging infrastructure at 234 sites at the end of RIIO-2, there will be pro-rated reduction of its allowance of £15.32m and £11.41m respectively.

2.42 Although NGET proposed to include the costs for its Internal Combustion Engine (ICE) fleet and its fleet opex costs as part of this PCD, we consider that there is less uncertainty around these costs and therefore propose to provide baseline allowances. For details of our assessment of NGGT's ICE vehicle costs, see Chapter 3.

2.43 We welcome NGET's proposals and note the ambition to reduce carbon emissions caused by operational travel. We consider that energy networks should be playing a key role in the decarbonisation of transport and are keen to facilitate them leading by example and converting their own fleets to EVs.

2.44 Although there is an incremental cost to consumers for replacing diesel vehicles with EVs, we consider that this cost is justified in order to help decarbonise the transport sector and to help the energy industry reduce its environmental impact.

2.45 We believe this approach will also encourage networks to be proactive with industry in addressing network-related issues that might otherwise hinder the wider rollout of EVs.

2.46 Charging infrastructure will need to be in place before the EV replacement can be implemented. NGET's proposed charging infrastructure investment is at the lower end of the range proposed by all TOs and GDNs in relation to the volume being installed, and we consider these costs appropriate and propose to allow the requested costs. These costs will be treated as low confidence with any over or underspend being subject to the Totex Incentive Mechanism (TIM)[19].

[18] In its Business Plan Annex A11.10, NGET set out that the incremental cost to consumers of NGET replacing 60% of its fleet with EVs rather than replacing 100% with traditional diesel vehicles is £5.51m
[19] See Core Document, Chapter 10

2.47 We recognise that EV costs are currently higher than non-EV costs and acknowledge there will be an incremental cost increase associated with this transition. However, we have some concerns about NGET's assumptions underpinning this cost increase.

2.48 There is uncertainty around future EV costs, with some industry experts predicting EV price parity by 2024[20], and we do not agree with NGET that the tendered costs for providing EVs, based on 2019 prices, are likely reflective of future costs.

2.49 We note that some network companies have not requested specific additional funding for converting their fleet to EVs despite committing to ambitious targets for EV replacement. Instead, they plan to do so from within their wider fleet opex or capex allowances. While we acknowledge that the volume of vehicles being replaced is considerably smaller in these cases, this contrasting approach to that proposed by NGET underlines our concerns that the EV unit cost assumptions adopted by NGET may be too high.

2.50 We also note that NGET's EV transition programme schedules a large volume of vehicle replacement towards the end of the price control, when industry experts predict prices will be considerably lower.

2.51 Despite this uncertainty around costs, given the positive contribution to low carbon, the materiality of the proposal and the re-opener criteria detailed in the Core Document, we do not feel it appropriate or proportionate to use a UM for these costs.

2.52 As described earlier, we have been unable to reach a view on an efficient unit cost for EVs. However, NGET's submitted unit cost of £27,125 for EVs (including fitting out costs) was the lowest of any of the network companies, and therefore we propose to accept NGET's unit cost.

2.53 We considered reducing NGET's proposed unit cost over the price control or making a reduction to the unit cost to reflect predicted reduction in the future EV market price; however, we did not feel we had enough information to develop a robust mechanism. We consider attaching this funding to a PCD sufficiently protects consumers, with any over- or underspend against the allowance treated through the TIM.

[20] https://fleetautonews.com.au/deloitte-predicts-electric-vehicle-price-parity-by-2024/

2.54 We propose to accept NGET's request of a PCD for £26.74m (£15.32m EV and £11.41m charging infrastructure).

Consultation questions

NGETQ6. Do you agree with our proposed approach to facilitating NGET's transition to an EV fleet?

Accept: SF6 asset intervention PCD

SF6 asset intervention	
Purpose:	To fund a large-scale intervention programme for assets containing SF6. The programme aims to reduce the direct network emissions of SF6 over RIIO-2.
Benefits:	To reduce the volume of harmful leakage of greenhouse gas emissions from NGET's Electricity Transmission network, and to facilitate progress towards its long-term commitment of Net Zero emissions.

Background

2.55 In its Business Plan, NGET proposed a volume driver UM to fund a large-scale asset intervention programme on network assets containing and leaking SF6, a potent greenhouse gas. The aim of the proposal is to achieve a sustained 33% reduction in annual SF6 emissions by the end of RIIO-ET2 compared to 2018/19 levels.[21] SF6 emissions abatement is necessary if NGET is to achieve its longer-term BCF Science-Based Target (SBT).[22]

2.56 NGET proposed a volume driver UM so that it would have the flexibility to develop and refine an asset intervention plan during RIIO-T2 for potential changes such as the availability of new SF6-free technologies, system access constraints and its non-load related works.

2.57 NGET proposed that the principles for a UM would be agreed before Final Determinations and that a methodology for developing an asset intervention plan would be agreed before the start of the RIIO-ET2. The methodology would include a probabilistic forecasting model that uses performance data and asset knowledge to forecast emissions. NGET proposed it would model emission forecasts to identify assets that are suitable for interventions.

[21] NGET's 2018/19 SF6 leakage was 12,270kg, equivalent to 293,253 tCO2 equivalent.
[22] Greenhouse gas reduction targets are considered 'science-based' if they are in line with the latest climate science advice on what is needed to meet the goals of the Paris Agreement - to limit global warming to well below 2°C above pre-industrial level and pursue efforts to limit warming to 1.5°C.

2.58 NGET proposed to refine the SF6 asset intervention plan annually, and submit the refined plan to Ofgem to approve funding prior to the start of each year. In addition, funding adjustments would be made at the end of each year according to the expected abatement output delivered.

2.59 NGET proposed that its SF6 asset intervention programme would include:

- leak prevention and remedial repair works for assets to support their operation to end of life; and
- strategic interventions, such as asset replacement, for assets approaching their end of lives, where emissions levels warrant an alternative to leak management.[23]

2.60 NGET proposed that the UM would operate on a unit cost basis for the avoided SF6 emissions over the asset's remaining life, ie £/kg.yr.[24]

2.61 NGET provided an initial cost estimate for the asset intervention plan of £150m (since revised to a range of £190m to £325m).

2.62 NGET considers that the UM proposal could work alongside their wider commitments under the Insulation and Interruption Gases (IIG) ODI[25] but is further considering the interactions.

Consultation Position

Output parameter	Consultation position
Mechanism design	We propose to reject NGET's bespoke UM proposal for a SF6 asset intervention plan. We propose instead to introduce a PCD in this area, subject to NGET submitting in August 2020 a well-justified and efficient draft methodology and asset intervention plan.
Output type	We are consulting on setting the PCD as a sustained 33% reduction in annual SF6 emissions at the end of RIIO-ET2, and some specified asset interventions.
Reporting	We propose that NGET reports annually on its progress against the asset intervention plan.

Rationale for Consultation Position

2.63 We propose to reject NGET's proposal for a volume driver UM and instead propose to introduce a PCD, with baseline funding. This is subject to NGET submitting a

[24] NGET proposed that the unit cost would be set to the non-traded carbon price.
[25] Please see our ET Annex for further information on the IIG ODI.

well-justified programme in August 2020 for SF6 asset interventions in RIIO-2. We consider there are advantages to a PCD, including:

- Setting efficient costs for emission abatement upfront;
- Consideration of individual assets as well as portfolios, and interactions with other parts of the Business Plan such as non-load replacement works; and
- Additional accountability for delivery, including financial 'claw-back' for under-delivery.

2.64 We have not seen evidence of modelling with robust track record of the avoided SF6 over the asset's remaining life and how that is impacted by a specific intervention. We therefore do not consider that a volume driver UM based on such a modelled metric would provide sufficient assurance that abatement would occur at costs that are economically efficient.

2.65 We consider there is merit in pursuing significant reductions in the use of SF6, and the associated emissions. In the absence of an intervention programme, it would not be feasible for NGET to make any significant progress during RIIO-T2 on its longer-term BCF SBT, due to the high volume of SF6 as a percentage of total network emissions.

2.66 However, we consider that NGET's proposal is not sufficiently developed at present, and we require further information from NGET in order to develop a suitable PCD. To do this, NGET needs to provide a well-justified programme plan for asset interventions in RIIO-2.[26]

2.67 If NGET has provided a well-justified SF6 asset intervention programme plan ahead of September 2020, we propose to assess and agree funding levels and suitable deliverables, as well as any associated reporting requirements, through RIIO-2 Final Determinations.

2.68 We considered whether to extend NGET's bespoke PCD to the other electricity TOs. We are not proposing to do this in RIIO-2 because the proportion of SF6 emissions on their networks is much less than NGET, and there are more economically efficient pathways for SPT and SHET to make progress on their respective SBTs during RIIO-2.

[26] A well-justified plan should explain the relevant factors NGET has considered in developing its plan such as asset intervention options, costs, the different modelling assumptions and scenarios.

2.69 There is the potential for overlap between this proposal and the common RIIO-ET2 IIG ODI. We propose to continue to work with NGET on developing its proposals, to consider how these can be adequately separated. We propose to make a decision at Final Determinations on whether to continue to apply the IIG ODI to NGET.

Consultation questions

NGETQ7. Do you agree that there is a need for a SF6 asset intervention PCD, and do you agree with our rationale for making this mechanism a PCD rather than a UM?

Bespoke Licence Obligations

2.70 The table below summarises the bespoke LO proposals that NGET submitted as part of its Business Plan and outlines our consultation position.

Table 12: NGET's bespoke LO proposals

Output name and description	Consultation position
Connecting generation customers: NGET proposed to invest in the network to connect 15.3GW of new generation, storage and interconnector for customers under the common energy scenario.	**Accept:** See Chapter 3.
Connecting demand customers: NGET proposed to invest in the network to connect demand customers when they request connections by installing 11 super grid transformers (SGTs) under the common energy scenario.	**Accept:** See Chapter 3.
Optimising with the ESO: NGET proposed to install system monitoring equipment across the network to help deal with the system implications of the transition to a low-carbon energy system.	**Accept:** NGET presented a well justified needs case for this proposal. We do have concerns over the limited cost analysis and flat spend programme provided, this limits our analysis in determining the efficiency of the proposal as we cannot fully ascertain the scope of the interventions. We therefore propose to re-categorise this as a PCD to manage this capex risk. Our cost assessment has removed £7.7m from Baseline. We have allowed the operation costs proposed in OPEX, £2.325m.

Consumer Value Propositions

2.71 As set out in our Core Document, we propose that NGET has failed the Stage 1 Minimum Requirements of the BPI. On that basis, NGET is not eligible to receive

rewards under Stage 2 of the BPI (CVP).[27] However, in the event that our position on NGET's Stage 1 outcome changes as a result of this consultation, we have provided our views on the CVPs proposed by NGET in its Business Plan.

2.72 In the absence of failing Stage 1 of the BPI, our proposal for Stage 2 would have been that one CVP proposal put forward by NGET should receive reward.

2.73 The table below summarises the CVP proposals that NGET submitted as part of its Business Plan and our consultation position in relation to each. Where additional space is required to outline our rationale, we have provided further information under specified headings.

2.74 For further information on the proposed CVPs, please see NGET's published Business Plan.[28] In the table below, outputs and benefits are as described in NGET's published Business Plan.

Table 13: NGET's CVP proposals

[27] Business Plan Guidance, paragraph 5.12, https://www.ofgem.gov.uk/system/files/docs/2019/10/riio-2_business_plans_guidance_october_2019.pdf
[28] NGET – Business Plan Annex, Consumer Value Propositions, https://www.nationalgridet.com/document/132096/download

CVP name and description	Consultation position
CVPs we propose to accept	
Caring for the natural environment: Increasing the natural capital value of all of its non-operational land by 10% during RIIO-2, delivering £14.67m benefit.	**Accept:** We consider that caring for the natural environment CVP goes beyond BAU and provides demonstrable consumer benefit. Please see further information under the heading 'Caring for the natural environment'.
CVPs we propose to reject	
Tougher Energy Not Supplied (ENS) target: Committing to a tougher ENS target at no additional cost to consumers, delivering £2.68m benefit through fewer loss of supply events, benefitting consumers, in particular vulnerable consumers who may be less able to cope in a power cut.	**Reject:** We propose to reject NGET's CVP proposal relating to the ENS Incentive, because it is not clear how NGET's proposed CVP goes beyond BAU. We consider that NGET's performance in RIIO-1 under the ENS incentive and the step-change in its ENS management should be reflected in target-setting, which would lead to a more challenging target.
Developing alternatives to SF6: Undertaking an innovation programme and activities to develop SF6 alternatives, delivering £13.1m benefit, through lower carbon emissions.	**Reject:** We propose to reject this proposal due to a lack of specific deliverables and cost breakdown. We also consider there to be other more appropriate routes for innovation funding, such as the NIA. There is also potential overlap with the proposed PCD for NGET's SF6 asset intervention programme, discussed above.
Optimisation of harmonic filtering: Changing the approach to harmonic filtering[29] so that NGET carry it out rather than customers, delivering £18.82m benefit through lower bills.	**Reject:** We are supportive of the principle of within period funding and consider there is merit in taking a more coordinated approach in harmonic filtering. However, we are not convinced that this is beyond BAU good practice. We request further analysis and robust evidence to indicate the frequency of a TO-led approach over T2 period, the probability of the approach being used and the level of benefit that can be realised relative to a customer-led approach. We also seek views on the wider administrative process to be undertaken to facilitate the implementation of the proposed solution. Specifically, further detail on the nature, scope and timing of necessary code changes to be implemented (including change to the Grid Code and Transmission Network Use of System charging methodology).
Supporting local urban communities: Proposing a new, innovative scheme to improve assets in urban areas, delivering £22.58m benefit, most directly to those living in the urban areas, which would include vulnerable consumers.	**Reject:** NGET's proposed CVP assumes additional consumer value beyond the proposed £50m Urban Improvement Provision UM, however it is not clear on what NGET intend to spend this money, therefore it is not possible to quantify the consumer value of this proposal. We do not agree with the justification for an assumed 50% additional social benefit in excess of cost for any money spent on supporting local urban communities as there was no reliable data to support it. Additionally, we are proposing to reject the bespoke UM which this CVP relates to, see Chapter 4.
Deeside innovation centre:	**Reject:** We expect innovation which was funded through the NIA in RIIO-1 to be rolled out as BAU in

Expanding and opening up Deeside innovation centre to allow cross-sector research and trials of technologies to allow whole-system innovations to be applied more quickly, delivering £26.13m benefit, through lower bills and lower carbon emissions.	RIIO-2. As the centre opened in RIIO-1 with the intention for the facility to be used by wider industry, NGET has not demonstrated that this proposal goes beyond BAU. We do not agree with the assumption the innovation trials will be successful and result in carbon savings.
Whole system approach to low-voltage substation re-builds: Saving consumers money by finding alternative whole-system solutions for managing faults at Grid Supply Points (GSPs), delivering £9.48m benefit, through lower bills.	**Reject:** There is insufficient justification that these alternative solutions go beyond BAU. We consider in this instance that the basic optioneering for these works should include interfacing with DNO Licencees to optimise their networks to reduce fault current through alternative running arrangements.
SO:TO optimisation: Proposing an approach to offer flexible options to the ESO to enable it to reduce constraint and whole-system costs for consumers, delivering £84.88m benefit, through lower bills.	**Reject:** There are multiple existing tools in place to ensure sufficient engagement and collaboration. We consider this CVP could create a perverse incentive. We do not think that we have the tools to measure the impact of the delivery of this CVP, at this time. Please see further information under the heading 'SO:TO optimisation'.
Whole-system alternatives to reactor investments: Finding alternative whole-system solutions to reactor investments to address reactive power issues, delivering £16.62m benefit, through lower bills.	**Reject:** There is insufficient justification to suggest that these alternatives go beyond BAU. We note that these works will be heavily influenced in future by the ESO's actions in potential Pathfinder Projects for Reactive Control. We are proposing to approve all of the reactor works NGET proposed in its Business Plan and would expect these interventions to be undertaken as planned.

Consultation questions

NGETQ8. Do you agree with our proposals on the CVPs? If no, please outline why.

Accept: Caring for the natural environment

Caring for the natural environment	
Purpose	To improve the natural capital value of NGET's non-operational land.
Benefits	Consumers will benefit from the improved environmental amenity and enhanced natural environment.

[29] Harmonics are distortions in power systems, which can damage equipment. There are set limits to permissible harmonic distortion, requiring filtering equipment. Currently, customer connections must provide harmonic filtering.

Background

2.75 Our SSMD[30] highlighted biodiversity as an area for companies to focus on when considering the environmental impact of their operations.

2.76 NGET proposed a CVP for £14.67m for increasing the natural capital value of all its non-operational land by 10% during RIIO-2 at no additional cost to consumers. If successfully delivered, this would result in enviromental value enhancement across NGET's sites, totalling around 2,800 hectares.

Consultation position

Output parameter	Consultation position
Deliverable	Increasing the natural capital value of all of NGET's non-operational land by 10% during RIIO-2.
CVP value(£m)	TBC – rationale below.
CVP reward (£m)	Revised CVP value * NGET TIM sharing factor rate to be determined through Final Determinations
Proposed approach to allowance clawback	Pro-rata return of reward for natural capital improvements of less than 10%.

Rationale for consultation position

2.77 NGET's caring for the natural environment CVP goes beyond BAU and proposes to deliver demonstrable environmental benefits.

2.78 We also note from NGET's Business Plan that this proposal has support from both Citizens Advice and the User Group.

2.79 However, we have not been able to verify satisfactorily the robustness of the land valuation tool used by NGET to quantify the value of its land. As such, we are not confident that the value of the CVP is reflective of the consumer value NGET considers it will provide.

2.80 We intend to engage with NGGT, NGET and SHET, who all submitted similar proposals in this area, to develop a robust common methodology for calculating the value that consumers place on biodiversity and natural capital ahead of RIIO-2 Final Determinations.

[30] SSMD Core Document, Paragraph 7.3, https://www.ofgem.gov.uk/system/files/docs/2019/05/riio-2_sector_specific_methodology_decision_-_core_30.5.19.pdf

Consultation questions

NGETQ9. Do you agree with our consultation position to accept (subject to eligibility) NGET's caring for the natural environment CVP? Do you agree with our proposal to re-quantify the value of the CVP?

Reject: SO:TO Optimisation

SO:TO Optimisation	
Purpose	Market-based mechanism where the TO can provide flexible services to the ESO at a competitive rate.
Benefits	To reduce constraint and whole system costs for consumers.

Background

2.81 NGET tabled incentive proposals in our RIIO-ET2 Policy Working Groups relating to whole system solutions that, in its view, could help reduce constraint costs, and thereby unlock value for consumers.[31] We consulted on these proposals in our SSMC and decided in our SSMD to reject them.[32]

2.82 NGET provided an updated proposal in its Business Plan. NGET proposed a market-based mechanism, which would allow NGET to provide flexible services to the ESO at a competitive rate. NGET's proposed mechanism is comprised of two parts:

- Optimising system access: NGET proposed to provide flexible services to the ESO on a select number of outages at a competitive rate (Main Integrated Transmission System (MITS) outages).[33]

- Getting more out of the existing network: NGET also proposed to offer the ESO short-term enhancement of asset capability to reduce constraint costs on the system.

2.83 The ESO can decide to accept NGET's flexible alternatives where it considers they would reduce constraint costs.

[31] Please find the incentive proposals tabled at our working group here: https://www.ofgem.gov.uk/system/files/docs/2018/12/18-12-17_nget_thoughts_on_so-to_incentives.pdf
[32] SSMD ET Annex, paragraph 4.83.
[33] Flexible services can include: offline builds, cancelling or rescheduling outages, accelerated timescales for output delivery etc

Consultation Position

2.84 We are proposing to reject this CVP proposal. We have set out our rationale below.

Rationale for consultation position

2.85 Firstly, based on the information available at this time, we cannot see a clear and identifiable gap in the current arrangements that would require new incentives and funding. We note that there are multiple existing tools in place to ensure efficient collaboration and engagement between the ESO and TOs for the benefit of consumers in relation to constraint costs. These tools include: the TOs Licence Obligation to have and act in line with the Network Access Policy (NAP)[34], obligations set out in the SQSS, the Operating Code 2 (OC2) forum[35], the SO:TO code (STC) and STC procedures (STCPs). We also note that the ENS incentive[36] incentivises the TOs to reduce energy not supplied and thus in some cases indirectly encourages efficient outage management.

2.86 In particular, we consider that the proposal overlaps with STCP 11.4, which is a new procedure that provides a £1.5m pot of funding for the ESO to pay the TOs to recover any costs incurred through modifying their fixed outage plans. The ESO also has the ability to submit a request to Ofgem to increase this pot where additional allowances are justified.

2.87 In relation to the 'Getting more out of the existing network' proposal specifically, we note that enhanced ratings services are already available to the ESO, where the TO could provide relief to constraints on the system.

2.88 We intend to monitor the use of STCP 11.4 through the KPIs that have been included in the NAP proposal put forward by the TOs for RIIO-2; KPI 11 in particular.[37] These KPIs will enable us to better understand TO outage management and the use of tools such as STCPs over RIIO-2.

2.89 Secondly, we do not think that we have the tools to measure the impact of these proposals. We note that it is challenging to calculate the counterfactual constraint costs after the adoption of a flexible solution.

[34] Please see the ET Annex for further information on the NAP.
[35] Please see the detail of the Operating Code 2 here: https://www.nationalgrideso.com/document/33856/download
[36] Please see the ET Annex for further information on the ENS incentive.
[37] Please see the ET Annex for further information on the NAP.

2.90 NGET provided its estimate of how much constraint costs could be reduced through the implementation of this proposal, however, we do not think that these estimates account for other opposing constraints. Therefore, we do not believe that they provide an accurate representation of potential consumer benefits.

2.91 Lastly, we consider that this proposal could drive unintended consequences or inefficient behaviours through commercialising the ESO/TO relationship. There is a risk that this proposal could perversely incentivise the TOs to come forward with unjustified outage plans, which could create opportunities for the TOs to be funded to provide flexibility, which may not be in the interests of consumers. We are also concerned that this could encourage the TOs to prioritise certain works in order to retain CVP rewards.

Consultation questions

NGETQ10. Do you agree with our proposal to reject NGET's SO:TO optimisation CVP?

3. Setting Baseline Allowances

Introduction

3.1 This chapter sets out our view on proposed allowances against the different cost areas within NGET's Business Plan submission. We have set baseline totex allowances for NGET 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 the work. We provide our views on what elements of the plan we propose should be accepted as the basis for setting the RIIO-ET2 baseline allowance, what elements we propose to reject as not being in consumers' interests and any proposed modifications to the efficient costs for company projects or activity levels. We also present the price control deliverables that arise from the proposed list of approved projects.

3.2 The table below sets out our proposed RIIO-ET2 totex allowances for NGET.

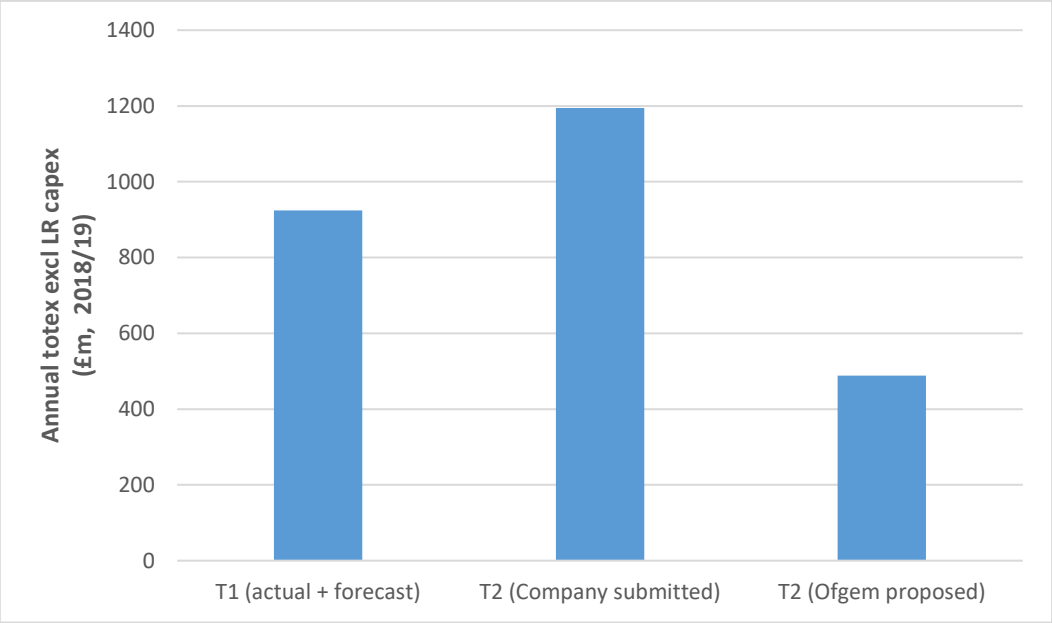
Table 14: Proposed NGET allowance for RIIO-2 period

Cost Category	NGET submission (£m)	Work/volume reductions (£m)	Cost reductions (£m)	Proposed allowance (£m)
Load related expenditure	1115.6	117.6	106.9	891.0
Non-load related expenditure	2650.9	1041.1	865.7[38]	744.1
Non-operational capex	376.9	149.4	52.1	175.4
Network operating costs	1174.6[39]	550.7	74.9	549.0
Indirect opex	1509.4	231.8	215.5	1062.1
Other costs	263.0	102.8	2.2	158.0
Efficiency challenge				-248
Total	**7090.3**			**3331.6**

[38] This includes a £556m clawback of unspent non-load allowances for T1/T2 crossover work
[39] This includes £202m of visual amenity costs which have been approved during RIIO-ET1 for spend through the ET1/ET2 periods. We have neither assessed these during the Business Plan evaluation nor included them in the RIIO-ET2 allowance table above.

3.3 The submission and proposed allowances for RIIO-ET2 and forecast RIIO-ET1 end position are shown in Figure 2, all values are shown in annual average and exclude load related capex.[40]

Figure 2: NGET Annualised Totex in RIIO-1 and RIIO-2 (excluding load related capex)



3.4 Of our proposed total baseline totex allowance[41], we assess £2563m to be of high confidence and £1165m of lower confidence. Also, some costs are deemed to be exempt from the BPI and TIM mechanisms and these are noted in the relevant section relating to the cost category. This results in a sharing factor for the TIM at 39.2%. The total proposed penalty due to the BPI stage 3 incentive is £179.6m. Our consultation position is that there are no BPI stage 4 rewards for NGET.

3.5 In support of its overall Business Plan submission and proposed baseline allowance, NGET included an engineering submission to detail and justify the proposed expenditure. This comprised 41 Engineering Justification Papers (EJPs), of which 9 were for Load Related Expenditure, 21 were for Non-Load Related

[40] We have excluded load-related capital expenditure from the comparison in Figure 2 because direct comparison of our baseline proposals against RIIO-T1 actual rates 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 proposals for RIIO-T2 do not reflect the impact of uncertainty mechanisms. We have set uncertainty mechanisms for RIIO-T2 to accommodate a potentially significant increase in investment needs, however, do not currently have a central forecast for this value.

[41] The baseline totex allowance used for calculating the BPI Stage 3 and 4 mechanisms and TIM incentive rate mechanism doesn't exclude the unspent non-load allowances for T1/T2 crossover work.

Expenditure and 11 were in respect of other cost items (Information Technology, Vehicles, Telecoms).

3.6 The EJPs were structured in a portfolio approach, generally grouped by asset type (lead and non-lead), rather than project or site specific. This made it difficult to use their content to support the interventions proposed in the Business Plan Data Template (BPDT). Further, the majority of the explanation provided in the EJPs was descriptive rather than a quantitative evidence-base as justification for their proposals.

3.7 Generally, the level of information, analysis and justification included was of significantly lower quality than what was expected or required. We have had significant levels of engagement through bilaterals and the Supplementary Questions (SQs) process. However, there are still numerous shortcomings with the information on which we have to base our Draft Determinations.

3.8 Consequently, we are in discussion with NGET in respect of submitting additional information, in particular on their proposed non-load related interventions.

3.9 The following sections set out the allowances we propose for NGET, and the rationale for any differences from the allowances requested by it in its submissions. These are dealt with in the order of their presentation in Table 14 (Table 14: Proposed NGET allowance for RIIO-2 period) above.

Capital expenditure (Capex)

3.10 We have reviewed the submitted capital expenditure programme along the main cost categories of load related expenditure, non-load related expenditure and non-operational capex.

Load Related Expenditure - Overview

3.11 NGET's baseline plan for Load Related Expenditure (LRE) comprises a range of projects across all of the categories in this cost classification. The total requested by NGET was £1116m. The majority of this expenditure is in the Wider Works category. These works relate to investments to enable electrical flows across the wider network, and are signalled by the Electricity System Operator (ESO) to the electricity TOs. The composition of the NGET LRE submission is given in Table 15.

3.12 With the exception of Wider Works projects informed by the NOA process and some Load Related Project Specific Proposals, our positions on which are explained in later paragraphs, for LRE projects with outputs in the RIIO-ET2 period, we are not proposing any work volume adjustments, and we consider the associated outputs to be reasonable. We consider that the projects are well-justified, and the needs cases are either linked to industry standard processes, such as the Network Options Assessment (NOA), or meet credible local needs. Our view is that the optioneering and developed solutions are consistent with the needs case.

Table 15: NGET RIIO-ET2 baseline LRE request (Gross)

Scheme Type	2022 (£m)	2023 (£m)	2024 (£m)	2025 (£m)	2026 (£m)	Total (£m)
Local Enabling (Entry)	19.9	20.5	23.3	65.0	52.6	181.3
Local Enabling (Exit)	15.1	30.6	14.7	5.3	9.2	74.9
Wider Works	193.1	214.8	77.0	74.4	128.9	688.2
LRE - Exit - Sole Use	11.5	14.7	7.1	5.6	6.5	45.3
LRE - Entry - Sole Use	5.7	4.6	5.8	4.1	4.3	24.6
TSS Infrastructure	23.9	28.1	18.6	15.0	15.8	101.4
Total	269.2	313.3	146.4	169.3	217.4	1115.6

3.13 We set out below first our assessment of the needs case for the relevant works, then our cost efficiency analysis for the works that we consider are justified to be the basis for setting the baseline totex allowances.

Needs case assessment

Local enabling (entry) and Sole Use (entry)

3.14 NGET's Business Plan submission included 36 projects that require spend to either deliver outputs in RIIO-ET2, or to progress the development of projects that would deliver outputs in RIIO-ET3. The forecast RIIO-ET2 net spend for these projects is £259.1m.

3.15 Those Generation Connection projects with deliverable outputs in RIIO-ET2 are listed in Table 38 in Appendix 2. In total, these baseline outputs would deliver a total generation capacity of 15.3GW in NGET's transmission area for a proposed cost of £139.2m. Of these, £60.1m relates to generation connections started in T1 and with delivery in T2. We describe in paragraphs 3.43 to 3.45 how

allowances for these crossover projects will be managed. For the others that are carried out within ET2, the proposed generation connection volume driver mechanism (see Chapter 4 for detail) would automatically adjust NGET's allowance if the actual capacity of new sole-use generation capacity connected is above or below the 15.3GW target.

3.16 Generation Connection projects that are expected to deliver an output beyond the T2 period are listed in table 41 of Appendix 3. These 11 schemes amount to a proposed spend of £119.9m in RIIO-ET2.

3.17 We propose to include these T2/T3 crossover projects in the baseline scenario and provide a level of ex-ante funding based on our assessment of:

- the annual profile of forecast expenditure expected to be incurred within the T2 period and the construction cost profile ('S curve');
- a description of the proposed value of the incremental transmission capability increase/uplift to power transfer requirements expected to be delivered and the specific network location and/or boundary that the proposed investment will impact;
- the evidence that the chosen investment provides value for money for consumers; and
- the evidence of the works to be undertaken in the delivery of the designed solution.

Sub 50MW connections

3.18 Within their Generation connection proposals, NGET included a request for funding to connect a growing number of smaller customers (<50MW per site) seeking connection via tertiary transformer windings[42]. This amounted to £35.81m across 10 schemes, the list of schemes can be found in Table 38 in Appendix 2.

3.19 We propose to capture the 10 schemes under a PCD. NGET's proposal to facilitate connections through this innovative connection design (the use of the tertiary windings of a transformer) does raise questions around wider changes required to

[42] NGET explains that connecting these sites via traditional methods by installing a dedicated SGT would result in an overall cost that would be uneconomic for the customer. NGET has proposed an alternative solution that utilises available tertiary winding on existing SGTs, delivering a solution at a lower average cost.

deliver the design solution. We welcome engagement with NGET and other interested stakeholders post Draft Determinations on the following areas and their impact on the design of the final PCD mechanism:

- a potential need to modify the Use of System Charging Methodology to facilitate the proposed movement of certain sole use assets to become shared use assets.
- an NGET transmission policy document setting out the rationale and supporting evidence for its approach to managing the saturation of tertiary connections on a substation. This would include analysis of the reduced scope for providing reactive control solutions and the impact upon the level of consumer value that will be realised.

Local enabling (exit) and Sole Use (exit)

3.20 NGET's Business Plan submission included 17 projects that require spend to either deliver outputs within RIIO-ET2, or to progress the development of schemes that would deliver outputs in RIIO-ET3. The forecast RIIO-ET2 net spend for these projects is £143.96m, to deliver, in period, 11 new supergrid transformers[43] (SGTs). Two of the SGTs will be located at a new Grid Supply Point (GSP), with the remaining being deployed at existing substations. We are proposing that these projects should be progressed by NGET. We propose that the output delivery associated with each of the works required to deliver projects in the T2 period are captured as a specific PCD.

3.21 Those Demand Connection projects with deliverable outputs in RIIO T2 are listed in Table 39 in Appendix 2. These 10 schemes have a combined proposed spend of £113.12m.

3.22 Demand Connections that are to deliver an output beyond the T2 period are listed in Table 42 in Appendix 3. There are 7 schemes listed with a proposed spend of £30.84m. We propose to retain these in the baseline scenario and provide a bridging fund based on our assessment of:

- the annual profile of forecast expenditure expected to be incurred within the T2 period and the construction cost profile ('S curve');
- a description of the proposed value of the Transmission Entry Capacity and linear assets expected to be delivered (in the case of generation connections)

[43] £1m is associated with the delivery of SGT from projects that commenced construction in T1.

and proposed substation capacity and linear assets to be delivered (in the case of demand connections);
- the evidence that the chosen investment provides value for money for consumers, and
- the evidence of the works to be undertaken in the delivery of the designed solution.

3.23 A further three schemes are anticipated to be substantively complete within T1 timescales but incur a small level of expenditure in T2. The total value of the baseline allowance proposed to complete these in-flight schemes is £1m. Their funding treatment is set out in the sub-section titled "Projects spanning price control periods" below.

Wider works

3.24 NGET's Business Plan requested £507m of baseline funding for 30 projects which would deliver 22.5GW of additional boundary transfer capability. These cover capacity delivered in T2 and capacity delivered beyond T2 period. Two types of activity are included:

- projects that received positive Network Options Assessment (NOA) recommendations and optimal delivery dates that require spending in the T2 period; and
- investments based on NGET's own views of what is required to meet its Licence Obligations.[44]

3.25 For less certain investments, NGET proposed to retain an automatic Unit Cost Allowance (UCA) based approach to fund the efficient delivery of network capability outputs developed in response to the results of the annual NOA process. Our proposal regarding this aspect is covered in Chapter 4.

3.26 Investments that receive positive signals from the NOA form the basis of our process to establish an efficient level of funding. We propose to provide an ex-ante baseline allowance to all investments linked to the delivery of additional transfer capability that received a 'Proceed' signal through the latest NOA, which was published in January 2020.

[44] NOA recommendations are not binding.

3.27 The recommendations made by the NOA 19/20 indicate that 8 of the schemes included in NGET's baseline plan are either no longer recommended due to changing network requirements or have been 'replaced' by alternative options submitted by NGET to the NOA 19/20 process.

3.28 We have used the latest NOA recommendations to determine the forecast level of baseline expenditure. On this basis, any projects removed under the most recent NOA have also been removed from our baseline proposal; we are proposing not to reject projects which have been put on "Hold". The remaining schemes are divided as follows: 17 schemes delivering 18.87GW of Boundary Capacity in T2 and 4 schemes delivering 5.032GW in a future period (NB remaining scheme treatment explained in para 3.29). We have therefore removed £156m from the level of the baseline funding requested. The list of projects delivering Boundary Capacity upgrades in T2 that we have considered and included with Baseline in this area are shown in Table 40 of Appendix 2, those delivering beyond the period are shown in Table 43 of Appendix 3.

3.29 One NOA driven investment not captured in Appendix 2 involves the installation of a power control device along the Blyth to Tynemouth/South Shields 275kV overhead line route (NOA code NEPC). The project is anticipated to deliver boundary capability increases of 425MW (B7 boundary) and 972MW (B7a) boundary in the early T2 period but all spend occurs in the T1 period. Therefore, NEPC is included in our T2 output total (18.87GW) but is not included in the costs described in Table 1 or as part of NGET's proposed baseline funding.

3.30 Following the NOA 19/20 update, and relating to those "replacement" projects that supercede those in NGET's Business Plan submission or new projects that have been given a proceed signal, we have received no updates from NGET on the scope, the timing of delivery or spend profiles for these projects. As NGET did not resubmit their BPDT for the proposed new NOA projects identified, we are unable to assess these projects for inclusion in baseline allowance.

3.31 In the event that further updated information is submitted by NGET, which is supported by robust cost and engineering evidence and is provided through the established templates, we propose to take this into account in our Final Determinations. In the case of projects above £100m, this may involve the removal of projects from baseline funding if they would be more appropriately dealt with through the LOTI UM.

Wider Works RIIO-T2 outputs

3.32 We propose that the output delivery associated with all approved works required to deliver works in the T2 period are captured as specific PCDs[45]. The output deliverable will reflect the prospective wider system reinforcement, expressed as the level of boundary transfer capacity to be delivered on across a specific boundary by a specified date.

Wider Works RIIO-ET3 outputs

3.33 We do not propose to capture as a PCD investments that are currently expected to deliver an output in timescales beyond the T2 period. Instead, we propose to provide a bridging fund based on our assessment of:

- the annual profile of forecast expenditure expected to be incurred within the T2 period and the construction cost profile ('S curve');
- a description of the proposed value of the boundary capability and linear assets expected to be delivered in T3;
- evidence that the chosen investment provides value for money to the consumer;
- evidence that the chosen investment will not be subject to additional design considerations within the RIIO-2 period that could impact on the final cost and timing of the project; and
- evidence of the works to be undertaken in the delivery of the designed solution.

Load Related Project Specific Proposals:

3.34 Within NGET's Business Plan proposals were 4 further schemes which do not sit within any of the categories described above, but do form part of the overall Load Related Request. These 4 schemes amount to a total ask of £212.2m. The schemes are described, along with a narrative of our considerations, in the table below.

[45] There is one exception: Kemsley Littlebrook reconductoring project is delivering no outputs in the RIIO-T2 period but a baseline allowance is proposed for the T2 cost element.

Table 17: Additional LRE schemes

Load Related Project Specific Works	Rationale for Proposals
Protection and Control Co-ordination (TSS Infrastructure): NGET proposed £31.15m for a Relay Setting review and for Protection and Control coordination study works. This included a proposed re-opener (potential value of £90m) for relay replacement dependant on the outcome of the review and study.	We propose funding for the protection and control coordination study and research works, £4.72m, to study the impact of changes in fault level infeed on protection relays. As the scope of works associated with relay replacement and setting changes will be determined on competition of the study work, the volume of work associated with relay replacement and setting changes is currently uncertain. Accordingly, we propose to remove the Relay Setting Review request from baseline, an adjustment of £26.43m. When the study works are complete we propose to consider funding via the Medium Sized Investment Projects Uncertainty Mechanism rather than the separate mechanism NGET proposed.
Easements: NGET have proposed an allowance of £93.3m to manage Easements across their network.	NGET have proposed a funding request that exceeds the RIIO T1 run rate. No justification has provided for this increase over T1 figures. The baseline allowance has been adjusted accordingly. We have removed £14.9m from Baseline.
Site Separation: NGET propose to separate site services at 9 sites for a cost of £41.4m	We note that the need case for these works has been well explained and cost breakdown of works has been well defined giving confidence around the costs presented. We believe that there is significant risk that some works may be deferred from T2, we therefore propose a PCD covering the proposed sites to manage this risk.
Wide Areas System Monitoring (TSS Infrastructure): NGET have proposed an allowance of £46.35m CAPEX and £2.325m OPEX, for the installation and operation of new system monitoring equipment.	NGET presented a well justified needs case for this proposal. We do have concerns over the limited cost analysis and flat spend programme provided, this limits our analysis in determining the efficiency of the proposal as we cannot fully ascertain the scope of the interventions. We therefore consider that a PCD is required to manage this capex risk.

3.35 Our needs case assessment of the 4 schemes listed removed £41.33m from the baseline request.

Cost assessment review of LRE projects

3.36 We have applied our view of efficient unit costs to the projects that have had their needs case accepted. The proposed allowances for projects with an associated PCD is shown below. In summary, we propose the following allowances for projects as grouped previously:

- new generation connections delivering output in RIIO-ET2: £100m.
- new generation projects with outputs beyond RIIO-ET2: £52m
- sub 50MW connection projects: £29.77m
- new demand projects with outputs in RIIO-ET2: £66.6m

- new demand projects with outputs beyond the RIIO-ET2 period: £13m
- For ET1/ET2 crossover demand projects: £1m
- Wider works projects with outputs in RIIO-T2: £163.7m
- Wider works with outputs beyond RIIO-T2: £80m

3.37 Our BPDT guidance instructed companies to extract any embedded risk and contingency costs from their asset and activity costs, and to present risk and contingency as a separate cost item. However, NGET's costing process only applies project-specific risk estimates for projects that have reached the "Develop and Sanction" stage in their project costing cycle (the fourth stage of a six-stage cycle). This represented a small subset of their submission. We have applied our treatment of risk and contingency (as detailed in the ET Annex) to this element of the submission, which has led to the proposed removal of £2m.

3.38 The remaining projects are proposed to have used unit costs that have risk and contingency embedded. This should manifest itself through their unit costs being proportionately greater than expected, and so, will lead to larger reductions when being assessed for unit cost efficiency.

3.39 In its LRE plan, NGET proposed a reduction of its overall asset costs in RIIO-2 by £27m; this reduction was titled 'Moving our benchmarked capex unit costs to be at or below the TNEI industry mean'. However, the submitted report that this cost reduction is based on, did not present the cost data behind the stated 'Industry Benchmarks' nor its source. In our review of this report, the 'Industry Benchmark' costs used in that review varied largely from our own independent benchmarks for the same assets. Furthermore, the proposed reduction was not linked to the schemes and assets directly at a granular level so it was not possible to compare against our own unit costs. For these reasons, we did not incorporate this asset cost reduction proposed by NGET in arriving at our view of efficient costs. We compared NGET's stated asset costs at a scheme level against our own unit costs and applied efficiency reductions where higher costs were not justified by NGET.

3.40 Our review of submitted costs, combining the asset cost efficiency and non-asset cost elements (including risk and contingency), has resulted in a proposed reduction of £109m to the cost level across the remaining LRE projects.

3.41 In our review of NGET's submitted costs, we identified that civil works associated with a specific asset type were being reported as part of the asset's costs instead of separately being reported as civil costs, which in our opinion was not in line

with our BPDT guidance. Where possible, we extracted the relevant civil costs from the asset costs and included them as part of our civil allowance for the respective projects, before comparing NGET's proposed asset costs against our own independent unit costs. This change has been accounted for in our proposals.

3.42 Including the approximately £117m costs relating to rejected schemes, we have removed £225m from NGET's proposed costs and allowed £891m as part of the baseline allowance.

Projects spanning price control periods

3.43 We set out in the ET Annex our proposed approach for projects spanning price control periods. NGET's baseline plan contains 11 generation connection projects, 15 demand connection projects and 21 wider works projects spanning RIIO-ET1 and RIIO-ET2. There are 14 generation projects, 4 demand projects and 9 wider works project spanning RIIO-ET2 and RIIO-ET3.

3.44 For the projects spanning RIIO-ET1/2, we assessed their efficient costs as set out in the section above. We then divided the total project efficient cost for these projects to the following two parts according to the NGET's submitted profile. Our proposed funding approach is:

- First part up to and including 31 March 2021 of £297m will be funded in RIIO-ET1 subject to true-up; and
- Second part from 1 April 2021 to 31 March 2026 of £612m will be part of RIIO-ET2 baseline allowances with relevant PCDs.

3.45 For the project spanning RIIO-ET2/3, our view of the efficient cost leads to a proposal of the bridging fund during RIIO-ET1 of £274m, subject to true-up at the end of RIIO-ET2.

Proposal on LRE capex allowances

3.46 Our proposed allowances for NGET's RIIO-ET2 LRE plan are tabulated below.

Table 18: Proposed allowances for NGET's RIIO-ET2 LRE plan

Scheme Type	2022 (£m)	2023 (£m)	2024 (£m)	2025 (£m)	2026 (£m)	Total RIIO-2 (£m)
Local Enabling (Entry)	18.2	15.4	19.6	46.3	37.9	137.4

Scheme Type	2022 (£m)	2023 (£m)	2024 (£m)	2025 (£m)	2026 (£m)	Total RIIO-2 (£m)
Local Enabling (Exit)	8.2	21.1	9.9	2.5	2.8	44.4
Wider Works	190.4	192.3	66.1	58.0	76.4	583.3
LRE (Exit - Sole Use)	9.0	11.8	6.5	4.2	5.0	36.4
LRE (Entry - Sole Use)	5.7	4.6	5.8	4.1	4.3	24.6
TSS Infrastructure	13.9	12.9	12.8	12.8	12.7	65.1
Total	**245.5**	**258.0**	**120.8**	**127.8**	**139.0**	**891.1**

High and Lower Confidence proportion in baseline totex allowance

3.47 Applying the methodology as set out in the Core Document, we assess that in our proposed baseline allowance for load related capex, £131m is high confidence and £510m is lower confidence.

BPI Stages 3 and 4

3.48 As stated in our RIIO-2 Core Document, we used the information submitted by NGET together with our independent asset unit costs in our assessment of confidence in submitted costs for the purpose of the BPI and TIM mechanisms. Cost confidence is our ability to independently to set an efficient cost to deliver an output. It considers our ex ante view of efficient costs to deliver certain outputs, and the consequent likelihood of the company spending a different amount for the same output. Confidence therefore relates to both our confidence in the proposed solution to deliver the stated output and our ability to independently set costs, for example by using unit costs for assets. Asset costs for which Ofgem has an independent unit cost and where Ofgem considers to have a high confidence in the justification of the proposed solution, have been classed as high confidence.

3.49 Where Ofgem does not have independent unit costs for given assets, and where we consider that NGET did not provide suitable independent cost information, these costs have been marked as lower confidence. NGET did not provide what we consider as suitable independent cost information for any assets. Non-unit costs such as those relating to civil works, risk and contingency, preconstruction, and 'other' cost categories within the BPDT are also classed as lower confidence as we cannot independently set an efficient cost for these nor did NGET provide sufficient independent cost information to support a high confidence classification for any of

these costs. This has resulted in the classification of £607m of NGET 's LRE submission as lower confidence.

3.50 Of these lower confidence costs, we propose to disallow £97m as unjustified or inefficient costs. Accordingly, our consultation position is that these attract a £9.7m disallowance penalty under the BPI stage 3 mechanism. We also propose that there are no stage 4 rewards under this cost category.

LRE capex PCDs

3.51 NGET's LRE programme comprised of several schemes with an output delivery year in RIIO-3. As stated in the ET Sector Document, the funding associated with such schemes, will be subject to the cross period funding mechanism. Consequently, the proposed RIIO-2 costs and Ofgem's allowance for these schemes are not subject to the BPI and TIM mechanisms.

3.52 For 'local enabling (entry)' and 'sole use (entry)' projects start and complete within RIIO-2, we propose to use the generation connection volume driver to adjust the baseline allowances of £152.13m up or down if the outturn connection volumes are higher or lower than the baseline values. The proposed allowances of £80.48m for 'Local enabling (exit)' and 'sole use (exit)' projects are similarly covered by the proposed demand connection volume driver. Both these volume drivers are set out in more detail in Chapter 4.

3.53 The outputs associated with all the projects completing in RIIO-ET2 that we propose to allow, and their efficient cost allowances, are tabulated below.

Table 19: Outputs and allowances for approved generation connections completing in the RIIO-ET2 period

Site	Output (dates as proposed in Appendix 2)	Proposed RIIO-ET2 allowance
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

Site	Output (dates as proposed in Appendix 2)	Proposed RIIO-ET2 allowance
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
Total	**15.265GW**	**£100.04m**

Table 20: Outputs and allowances for approved demand projects completing in the RIIO-ET2 period

Site	Output (dates as proposed in Appendix 2)	Proposed RIIO-ET2 allowance
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
TOTAL	9 SGTs 2 SGTs at New GSP 2 New GSPs	£66.55m

Table 21: Outputs and allowances for wider works projects completing in the RIIO-ET2 period

Site	Output – MW increase in capability by system boundary	Proposed RIIO-ET2 allowance
Burwell Main 400kV substation (NOA code: BMM2)	EC5: 550MW LE1: 290MW	[REDACTED]
Bolney and Ninfield 400kV substations (NOA code: BNRC)	SC1: 2120MW SC2: 400MW B15: 1726MW	[REDACTED]
Creyke Beck to Keady route (NOA code: CBEU)	B8: 580MW	[REDACTED]
Elstree to Sundon circuit (NOA code: SER1)	B14: 390MW SC1: 1970MW	[REDACTED]
Harker SGT5 Replacement (NOA code: HEA2)	B6: 409MW B7a: 68MW	[REDACTED]
Harker SGT6 Replacement (NOA code: HEAU)	B6: 550MW B7: 236MW	[REDACTED]
Hinkley to Bridgewater route (NOA code: HBUP)	B13: 960MW SC1: 770MW	[REDACTED]
Thornton 400kV substation (NOA code: THS1)	B8: 586MW	[REDACTED]
North East Region (NOA code: NEMS)	B7: 211MW B7a: 1035MW	[REDACTED]
Keady – West Burton 2 circuit (NOA code: KWHW)	B8: 346MW	[REDACTED]
Harker to Stella West route (NOA code: HSS2)	B6: 305MW	[REDACTED]
North of Harker (NOA code: MHPC)	B6: 600MW	[REDACTED]
Bolney, Lovedean and Fleet 400kV substations (NOA code: SEEU)	SC2: 400MW	[REDACTED]
Bramford to Braintree to Rayleigh Main circuit_2 (NOA code: BRRE)	EC5: 228MW	[REDACTED]

Site	Output – MW increase in capability by system boundary	Proposed RIIO-ET2 allowance
Rayleigh to Tilbury circuit_2 (NOA code: RTRE)	LE1: 1220MW	[REDACTED]
Kemsley - Littlebrook - Rowdown (NOA Code: KLRE)	B15: 3341MW SC1: 1830MW SC3: 1473MW	[REDACTED]
Turn-in of West Boldon to Hartlepool at Hawthorn pit (NOA code: WHT1)	B6: 771MW B7: 506MW B7a: 246MW	[REDACTED]
TOTAL	18.87GW	**£163.73m**

Note: Delivery dates as proposed in Appendix 2

3.54 Our proposed bridging fund for all the projects delivering outputs beyond RIIO-ET2 are tabulated below.

Table 22: Generation connection projects delivering outputs beyond the RIIO-ET2 period

Site	**T3 output**(dates as proposed in Appendix 3)	Proposed allowance (RIIO-ET2)
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
TOTAL	**13.49GW**	**£52.09m**

Table 23: Demand connection projects delivering outputs beyond the RIIO-ET2 period

Site	Output(dates as proposed in Appendix 3)	Proposed RIIO-ET2 allowance
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
TOTAL	13 SGTs (10 at New GSps in T3, 3 at existing sites in T1)	£13.93m

Table 24: Wider works projects delivering outputs beyond the RIIO-ET2 period

Site	Output - MW increase in capability by system boundary	Proposed RIIO-ET2 allowance
Bramford and Twinstead route (NOA code: BTNO)	EC5: 488MW LE1: 1330MW	[REDACTED]
Bramley to Melksham (NOA code: MBRE)[46]	B12a: 1416MW	[REDACTED]
North Wessex[47]	Visual Improvement Project	[REDACTED]
Hinkley Point – Taunton and Hinkley Point – Taunton – Exeter[48] (NOA code: THRE)	SC1: 1798MW	[REDACTED]
TOTAL	**5.032GW**	**£79.96m**

Note: Delivery dates as proposed in Appendix 3

Non-load Related Expenditure (NLRE)

3.55 NGET's NLRE submission was presented across 21 Engineering Justification Papers which related to £3.3bn of proposed costs. The supporting BPDT detailed projects

[46] Replace the conductors in the double circuits between Bramley to Melksham circuits with higher-rated conductors to increase their thermal ratings.
[47] Up-rate a short section of cable as part of the North Wessex Downs Visual Impact Provision scheme in anticipation of the future NOA requirement to deliver the Melksham – Bramley overhead line (MBRE) project.
[48] Re-conductoring of the existing ZZ route Hinkley Point – Taunton 1 & 2 circuit and Hinkley Point – Taunton – Exeter circuit to increase the thermal capability.

with a total proposed cost of £2651m. The composition of the NGET NLRE submission is given in the table below.

Table 25: NGET RIIO-2 baseline NLRE request (Gross)

Scheme Type	2022 (£m)	2023 (£m)	2024 (£m)	2025 (£m)	2026 (£m)	Total (£m)
Replacement	449.9	438.5	435.6	342.4	319.8	1,986.3
Refurbishment	97.0	110.6	128.1	121.4	107.3	564.4
Non-Load Other	17.5	18.8	21.2	21.2	21.5	100.2
Total	**564.4**	**567.9**	**584.9**	**485.0**	**448.7**	**2,650.9**

3.56 In assessing NGET's NLRE plan, we have identified a number of common factors which introduce significant uncertainties in asset work volumes and timings:

- Network Asset Risk Metric (NARM): Where NARM has been used to justify the volume and type of intervention; we consider that these proposals are not fully supported by engineering evidence, consideration of intervention options or work scopes. The evidence provided thus far does not justify the proposed level of expenditure.
- Degradation Forecasts: NGET has to manage an aging population of assets and degradation projections are a key supporting element in determining the timing for interventions. Our view is that asset condition degradation projections presented by NGET, and the associated intervention thresholds are not fully substantiated. The evidence provided thus far does not justify the proposed volumes.
- Extensive use of the Anticipated Asset Life (AAL) metric in NGET's plan: it is not clear from the submission how this metric has been derived, nor how it is informed by equipment condition. This results in interventions based mostly on age rather than evidence based condition information;
- Lack of clarity in the relationship between NGET's EJPs and the BPDT which prevented similar levels of cost analysis of NGET's plan in comparison to the other ETOs.

3.57 In our SSMD, we set out our expectation for the network companies to use NARM to help demonstrate that they have chosen to intervene at the optimal time and use the correct type of intervention. We also stated that NARM will be part of the toolbox approach to justifying and assessing proposed investments and preferences for chosen strategies. The toolbox approach should also include an

evidence based assessment of the condition and performance of an asset and its likely deterioration to justify the need, scope and timing of any intervention.

3.58 NGET's use of NARM results in low risk (healthy) assets with high consequence of failure being identified for replacement, without considering potentially more efficient options of intervention such as delaying the replacement or addressing the consequences of failure.

3.59 After receiving NGET's Business Plan, we issued a series of SQs to clarify or gain necessary information for us to assess what NLRE work is required. NGET have provided additional papers and data in response and are still in the process of making a number of additional information submissions.

3.60 Our proposals contained in these Draft Determinations are based on our assessment of information submitted before 31st May 2019. Subsequent information[49] will be reviewed, together with wider responses to the Draft Determinations, in making our Final Determinations.

3.61 We set out below first our assessment of the needs case for the main asset categories under review, grouped by lead assets, non-lead assets and project specific assessments. We then set out our cost efficiency analysis for the works that we consider are justified to be the basis for setting the baseline totex allowances.

Needs case assessment

Table 26: NLRE Lead Assets

Lead Asset Group	Rational for Proposed Reductions
Power Transformers: NGET propose spending £253m for the replacement of Super Grid Transformers (SGTs) and Static Compensator Transformer (SCTs).	NARM has been used to select intervention assets and a blanket intervention option of replacement has been applied. As a result, the NGET proposal seeks to replace a number of SGTs reported as healthy but which have a high Consequence of Failure (CoF). Where asset replacement has been proposed for high CoF we consider replacement is not deemed proportionate to the needs case as the CoF will not change. Accordingly, we have rejected these volumes and associated costs. This results in a reduction of £154.3m compared to the baseline request. We also propose to reject an additional request for £25.9m for development works for RIIO3 SGT interventions due to the uncertainty associated with these works.

[49] Including NGET template review

Lead Asset Group	Rational for Proposed Reductions
Overhead Line (OHL) Conductor and Fittings. NGET propose spending £621.2m on conductor and fittings. The proposed work is an increase volume by 83% for conductor and 45% for fittings compared to RIIO-T1.	For Overhead Line conductor, NARM has been used to select intervention assets and NGET seek to replace a number conductor spans and fittings that are low risk (POF) with associated low End of Life parameters. We consider that the volume of work is uncertain. The initial selection of assets and calculation of End of Life has not been demonstrated as fit for purpose and the projected in period degradation of OHL conductor has not been substantiated. For OHL fittings we observed an evidenced approach to NGET's risk scoring for fittings utilising detailed condition data. However, we consider the volume of work is uncertain; it is not clear what scope of works is proposed for each OHL route nor the interaction with conductor replacement proposals. Furthermore, many of the fittings included in the proposal are not reported to have deteriorated to a point that would necessitate intervention. Without a clear description of scope and interaction with other works we cannot determine whether these works are required, economic, or efficient. Accordingly, we have rejected these volumes and associated costs. This results in a volume based reduction of £520.6m compared to the baseline request.
Circuit Breakers and Bay Equipment – NGET proposed an investment of £351m in their CB and Bay Equipment.	For circuit breakers the majority of NGET's work proposals have been accepted. In a small number of cases where asset replacement has been proposed for high CoF assets we consider replacement is not deemed proportionate to the needs case as the CoF will not change. Accordingly, we have rejected these volumes and associated costs. For bay equipment, NGET's proposals prioritised intervention based on Anticipated Asset Life (AAL). Based on the information provided, it is not possible to assess the needs case justification for each individual bay asset. It is clear from NGET's responses that not every asset is evaluated in terms of its condition. However, the actual condition of the asset, when it comes to replacement, may warrant that the individual asset life is extended rather than replaced. Due to the lack of condition information we consider the volume of bay equipment proposed by NGET to be highly uncertain. In the absence of other evidence, we have approved a volume based on the NGET stated relationship between CBs and Bay Equipment, which details that for an individual CB intervention there are on average 6 Bay Equipment interventions. Where interventions are not justified, we have removed these volumes and cost from NGETs baseline request resulting in a volume based reduction of £282.27m.
Cables; Lead and Non-Lead. NGET have proposed to invest	For Lead Cables the major project included is the Pitsmoor-Wincobank-Templeborough cable. We consider that the needs case for the Pitsmoor-Wincobank-Templeborough has not been

Lead Asset Group	Rational for Proposed Reductions
a total of £76.19m in these areas.	made. The needs case for intervention on this cable is predicated on the reported subsidence issues along the cable route, the cable itself has a low risk score indicating its condition to be in the acceptable range. The monitoring equipment on this cable route was removed in 2016. No recent data indicating continued movement of the ground around the cable has been provided. We are unable to ascertain if the risk of failure has changed since 2016, and this raises questions over the timing and requirement for intervention now. For non-lead cable replacements, the case for intervention has not been made. NGET have not provided evidence to substantiate the proposed intervention. Without evidence of failure mechanisms we cannot ascertain whether the proposed works are economic and efficient. Where interventions are not justified we have removed these volumes and cost from NGETs baseline request resulting in a volume based reduction of £39.94m in Lead Cable, and £23.46m in Non-lead cable.

Table 26: NLRE Non-Lead assets

Non-Lead Asset Group	Rational for Proposed Reductions
Protection and Control – NGET have proposed an investment of £489m in this area.	In their proposals for investment in Protection and Control, NGET have categorised identified assets under one of three drivers; Obsolescence, Lack of Technical Support and Performance. But NGET's EJP is limited in its detail and analysis around the need for intervention, the intervention options considered and the proposed scope. Without explanation, the allocation of assets to one of the three drivers, appears arbitrary, and without evidence or a description of scope we cannot ascertain whether the proposal is economic and efficient. We have approved those volumes allocated under the Performance driver, but have rejected the others due to lack of evidence. Our approval is conditional though on NGET providing evidence of performance issues prior to our Final Determinations. Where interventions are not justified, we have removed these volumes and cost from NGETs baseline request resulting in a volume based reduction of £244m.
Substation Auxiliary Systems. NGET propose an investment of £75.05m in this area.	Substation Auxiliary Systems proposals cover a number of discrete interventions for substation Diesel Generators, LVAC systems and battery systems. We accept NGETs need case for battery interventions and propose no deductions in that area. However we consider that the

Non-Lead Asset Group	Rational for Proposed Reductions
	proposed interventions for Diesel Generators, LVAC systems are not fully substantiated. The need for intervention is bounded into discrete time blocks, 0 to 2 years, 2 to 5 years and finally 5 to 10 years. Each asset is assigned an intervention timescale, but no evidence has been provided to substantiate the intervention timescales on a given asset. A significant proportion of the proposed asset volumes are classified as requiring intervention in the 5-10 year band. This band extends beyond the end date of the RIIO T2 period. We have accepted the asset interventions in the bands covering 0 to 5 years. Without evidence on how the portfolio of assets was assigned to the 5-10 year band, or the proposed scope of works, we cannot ascertain whether those proposed are economic or efficient. Based on this lack of evidence we consider that asset assigned the 5-10 year intervention band are not justified. Where interventions are not justified, we have removed these volumes and cost from NGETs baseline request resulting in a volume based reduction of £37.3m
Instrument Transformers. NGET propose an investment of £66.2m.	Where interventions are driven by PCB legislation, we have made no adjustments. For non PCB interventions condition information indicated that a number of the assets included may not deteriorate to the extent that they would require intervention in T2. The projected in period degradation has not been substantiated, and therefore the replacement of volumes is not justified Where interventions are not justified, we have removed these volumes and cost from NGETs baseline request resulting in a volume based reduction of £40.88m.
Towers and Foundations – NGET proposed an investment of £196.93m in this area.	Our review of this proposal identified significant crossover in proposed scope between the proposals on OHL Conductor and Fittings, Extreme Weather and this paper. Without clear evidence as to what assets are covered by each investment proposal, it is impossible to rule out the possibility of double funding. We have concerns over the classification of Grade 4 (recoverable steelwork); we cannot ascertain from the evidence provided whether the proposed interventions are economic or efficient. We noted a significant increase in cost over the T1 figures for Tower foundations, but evidence was not provided to justify this increase. Where there is no evidence to support the efficient intervention on towers and foundations, we consider that the associated volumes are not justified. Where interventions are not justified, we have removed these volumes and cost from NGET's baseline request resulting in a volume based reduction of £69.33m

Table 27: NLRE Project Specific

Project Specific Works	Rational for Proposed Reductions
Tyne Crossing Undergrounding – a proposal from NGET to underground the Overhead Line of the Tyne to facilitate economic growth and extend the working life of Tyne Industries. [REDACTED]	The EJP and subsequent discussions with NGET have identified concerns over the allocation of these works and the driver behind them. The works do not sit easily in any investment category as we have defined them in our RIIO T2 guidance. We have discussed this project with NGET and have mutually agreed to remove it from Baseline at this stage and include it as part of an in-period funding request through the MSIP re-opener. This adjustment will not be subject to any BPI assessment. We propose to continue to work with NGET to ensure the most appropriate categorisation of these work.
Dinorwig-Pentir Cable and Substation Replacement – [REDACTED]	The needs case on which these works are predicated is not reflected in the risk scoring allocated to the cables. NGET describe a history of fault related issues with the Dinorwig-Pentir cables that cover a period extending back beyond the start of the current Price Control period, but over the same period the cables risk score has not worsened. The optioneering presented was broad and the proposed intervention was shown to address the short and long term network risks, but further justification is needed on to support the timing of the investment. The case, as presented, does not explain the need to intervene now when the performance issues and asset risk scores have remained constant for a significant period of time. Our concerns over investment timing have led to us to removing this proposal from baseline funding in our Draft Determinations. This results in an adjustment of £158m from NGETs proposed baseline allowance.

Cost efficiency assessment

3.62 In light of the portfolio approach taken by NGET in compiling its BPDT for NLRE, we were unable to directly apply our model for assessing costs. Cost had not been presented at a sufficiently disaggregated level; for instance, multiple assets across multiple sites were assigned single costs, making it impossible to check the validity of the submitted costs. Portfolio based costs combined with limited EJP detail prevented the level of cost information analysis as was undertaken for other TOs.

3.63 We have used a combination of approaches to come to a view on efficient costs of asset interventions that passed the needs case assessments [50]:

[50] This is similar to the approach used for other Licensees, albeit for their submissions our model automated this process. For NGET these works were undertaken manually where possible.

- where we had detailed project information backed up by tender information, we used this as our view of efficient cost – for example, London Power Tunnels project
- otherwise, we compared the asset specific unit costs provided by NGET against Ofgem's equivalent unit cost. Where the Ofgem unit cost was lower we then referred to the associated EJP.
    - If that contained any evidence that supported a higher unit cost than Ofgem's, we applied the higher unit cost
    - Otherwise, we applied Ofgem's rate across the proposed allowed volume

3.64 As detailed in our sectoral document[51] we have made a systemic reduction across NGET's submission of project risk and contingency. Removing these costs from the presented asset costs has resulted in the removal of £12.36m from NGET's NLRE submission

Projects spanning price control periods

3.65 As part of RIIO-ET1 baseline allowance, there is a provision of £1069m to fund NLRE work that needed to start in in RIIO-ET1 and would be completed in RIIO-ET2. We first assessed the total efficient costs for such work as set out in the section above and then divided this amount to the following two parts according to the NGET's submitted profile. Our proposed funding approach is:

- First part up to and including 31 March 2021 of £513m will be funded in RIIO-ET1 subject to true-up; and
- For the second part from 1 April 2021 to 31 March 2026, at this stage, we are unable to quantify the RIIO-ET2 efficient allowance associated with the work that will start in RIIO-ET1, due to the way in which information has been submitted in the BPDTs and EJPs by NGET for NLRE capex. However, this amount is part of the total RIIO-ET2 baseline allowance for NLRE and will be subject to the relevant NLRE PCDs.

3.66 Given that the amount already funded in RIIO-ET1 is already certain, we propose to carry out the true-up now and reflect that in the setting of RIIO-ET2. This results in a reduction of £556m to our proposed baseline NLRE funding for NGET.

[51] Please refer to section 3.27 of the RIIO-2 Draft Determinations - Electricity Transmission sector document published as part of this consultation.

Proposal on NLRE capex allowances

3.67 The table below shows the outcome of our two stages of analysis; needs case assessment, followed by cost efficiency assessment. The NGET request column reflects the amounts proposed for funding under the EJP submissions; these amounts cover both RIIO-T2 works and some works that overlap into T3, so the column total is greater than the RIIO-T2 requested amount of £2651m. The Work/volume reductions represents the deductions from the EJPs for work deemed to be not needed in the RIIO-ET2 period; the cost reduction then represents the subsequent unit cost/risk and contingency reductions applied to the remaining volume of work. The proposed Ofgem allowance for RIIO-T2 is given in the rightmost column. Note that the penultimate row includes the true up for forecast unspent allowance from RIIO-ET1 in respect of the work that bridged the RIIO-ET1 and RIIO-ET2 periods.

Table 28: Proposed Deductions from NGET NLRE baseline submission

Asset	NGET Request (£m)	Work/volume reduction (£m)	Cost reduction (£m)	Ofgem allowance (£m)
Power Transformers	253.0	154.3	40.0	58.7
OHL Conductor & Fittings	622.0	462.0	64.1	96.0
Circuit Breakers & Bays	351.0	283.2	0	40.0
Cables Lead	39.9	0	0	0
Cables Non Lead	36.3	23.5	6.7	6.1
Reactors	54.8	5.3	8.5	41.0
Protection & Control	489.0	244.0	185.4	59.6
Substation Auxiliary Systems	75.1	37.3	0	37.8
London Power Tunnels	645.8	0	0	645.8
DINO PENT Cables	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Instrument Transformers	62.7	40.9	5.0	16.8
Blackstart	22.0	0	0	0
Easements	93.3	20.3	0	73.0
Through wall bushing	14.6	4.2	0	10.4
Tyne crossing	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Strategic Spares	45.7	0	0	45.65
Tower and Foundations	196.9	69.3	0	127.6
Condition monitoring	22.1	8.1	0	14.0
SCADA replacement	50.0	50.0	0	0
T1/T2 unused funding true-up				(556)
Total	3322.2			744

High and Lower Confidence proportion in baseline totex allowance

3.68 Applying the methodology as set out in the Core Document, we assess that in our proposed baseline allowance for non load related capex, £645m is high confidence and £655m is lower confidence.

BPI Stages 3 and 4

3.69 As outlined in the LRE section, asset costs for which Ofgem has an independent unit cost and where we have a high level of confidence in the justification of the proposed solution to deliver the stated output, have been classed as high confidence.

3.70 We consider that NGET provided suitable independent cost information for all costs relating to one specific scheme. These costs have been classified as high confidence costs. We have classed all other costs in NGET's NLRE proposal as low confidence, as we consider that NGET did not provide sufficient independent cost information to support a high confidence classification for these costs. This equates to the classification of £2,005.9m of NGET's NLRE submission as lower confidence.

3.71 Of this, we propose to disallow £1,351m as unjustified or inefficient costs. Accordingly, our consultation position is that these attract a £135.1m disallowance penalty under BPI Stage 3. We also propose that there are no Stage 4 rewards under this cost category.

NLRE PCDs

3.72 The outputs associated with this funding are tracked through the Network Asset Risk Metric (NARM) and are detailed in our NARM annex. The London Power Tunnels project will be a ring-fence with an individual PCD.

Non Operational Capex

Background

3.73 Non-operational capex costs comprise the following four activities:

- Property
- Small tools, equipment, plant and machinery (STEPM)
- Vehicles and transport
- Information Technology and Telecoms (IT&T)

3.74 NGET requested an allowance of £376.9m across these categories for the RIIO-ET2 period. Our view on the appropriate funding is given below; our assessment approach to derive these allowances is detailed in the ET Annex[52].

3.75 Property costs: we propose to allow the property costs requested by NGET, as these have met our efficiency tests against historical run rates and ratio analysis.

3.76 STEPM: we saw no rationale or justification for the proposed uplift to STEPM and propose to set RIIO-2 allowances in line with our stated approach of using historical run-rates.

3.77 Vehicles and transport: our proposed allowances for vehicles and transport followed the approach set out in the ET Annex, which recognises the unit cost variance between EV and non-EVs and the proportion of these within NGET's fleet.

3.78 IT&T: NGET proposed 12 IT&T projects for the RIIO-ET2 period. Following scrutiny by both us and our external advisors, our view is that only 5 of these projects are at a sufficient stage of maturity to enable us to assess and propose to approve their needs cases. However, we consider that the associated costs are not robust; in line with the RAG rating process described in the ET Annex, we propose to make adjustments to the allowances requested by NGET. NGET requested £187.6m for the following approved projects: portfolio & plan optimisation capabilities; infrastructure; condition monitoring and analytics; corporate & business services and Other for which we have allowed £143.6m. Further details on the assessment of the individual projects can be found in our consultant's report[53].

3.79 The proposed overall allowance for NGET's non-operational capex is tabulated below.

[52] RIIO-2 Draft Determinations - Electricity Transmission sector document: Chapter 3
[53] Refer to Atkin's IT&T assessment report, published as part of this consultation.

Table 29 Proposed Non Op Capex Allowances

Cost Category	NGET Submission (£m)	Volume reductions (£m)	Cost reductions (£m)	Ofgem Allowance (£m)
Property	10.0			10.0
IT&T*	337.0		44.0	143.6
STEPM	9.3		4.8	4.5
Vehicles & Transport	20.6		3.3	17.3
TOTAL	376.9		52.1	175.4
*£149.4m of submitted IT projects will be subjected to a UM				

High and Lower Confidence proportion in baseline totex allowance

3.80 Our current view is that all of the non-operational capex costs are high confidence, with the exception of the property proposals which have been rejected due to the lack of a coherent needs case. Non-operational capex has been subjected to expert review and/or predicated on historical RIIO T1 run rates. Therefore, we have high confidence in the outturn costs.

BPI Stages 3 and 4

3.81 All of the disallowed costs in this category are considered as high confidence, so there is no BPI stage 3 penalty. Our consultation position is also that there are no stage 4 rewards under this cost category.

Operational expenditure (Opex)

3.82 Operating expenditure comprises network operating costs and indirect operational expenditure. Opex comprised a total of £2.7bn out of NGET's submission.

Network operating costs

3.83 These costs can be broken into the following sub-categories as reported in the BPDTs:

- Faults
- Inspections
- Repairs and Maintenance
- Vegetation Management

- Operational Protection Measures and IT Capex
- Legal and Safety

3.84 Faults: we propose to allow NGET's requested funding for faults as the cost and activity levels are in line with historical levels.

3.85 Inspections: we propose to allow NGET's requested funding as £94m. Our expectation is that there is a significant increase the level of asset specific data provided to the various systems to evaluate network risk. Therefore we propose to allow NGET their original request in full.

3.86 Repairs and Maintenance: our proposed allowed costs for repairs and maintenance is based on our detailed assessment of costs and activities proposed in NGET's Business Plan BP and the review of subsequent SQ responses. This process has resulted in our proposed deduction of £206.88m of costs that are included in NGET's BPDTs as not justified. We note the following:

- NGET provided an EJP which detailed the funding request for £209m. It was not clear how this interfaced with the BPDT which requested a greater value.

- Our approval is condition on NGETs additional information submission to clarify the levels of expenditure expected.

- At present we are not able to evaluate if the repair and maintenance investment performance in RIIO1 is efficient or economic. We note that the RIIO2 plan appears to be heavily influence by the 2018/19 expenditure values for these works, with limited evidence provided that the plan is built from condition based requirements.

3.87 Vegetation Management: we propose to allow NGET's requested funding as the cost and activity levels are in line with historical levels.

3.88 Operational Protection Measures and IT Capex: in our view, NGET provided insufficient evidence that two of the five schemes it is proposing can be delivered within the RIIO-T2 period. Our proposed cost allowance is based on our view of the proportion of work which is justified and deliverable in RIIO-T2.

3.89 Legal and Safety: we are proposing to allow £69.805m of "other" costs within the this cost category, subject to NGET providing further justification for these costs.

Table 30: Proposed Network Operating Costs allowances against NGET submission.

Sub-category	NGET Submission (£m)	Work/volume reduction (£m)	Cost reduction (£m)	Proposed Allowances (£m)
Faults	1.0	0.0	0.0	1.0
Inspections	94.0	0.0	0.0	94.0
Repairs and Maintenance	415.9	206.9	0.0	209.0
Vegetation Management	29.6	0.0	0.0	29.6
Operational Protection Measures and IT Capex	186.9	124.8	0.0	62.1
Legal and Safety	244.8	16.6	74.9	153.3
Total	**972.2**	**348.3**	**74.9**	**549.0**

3.90 Our view is that since we are basing the allowances on RIIO-ET1 incurred historical costs, all cost categories are considered to be high confidence costs except the following:

- flood mitigation schemes within the "Legal and Safety" sub-category,
- operational protection measure and IT capex sub-category and
- Repairs and maintenance sub-category.

3.91 The bespoke nature of flood mitigation schemes and work schemes in the operational protection measures and IT capex sub-category means their costs are considered to be lower confidence.

3.92 We consider that the original requested amount that we have deducted for the three areas above in the lower confidence category was inefficient and therefore would be subject to a BPI Stage 3 penalty.

3.93 Our consultation position is that there would be no PCDs for this cost category.

Indirect operational expenditure

Background

3.94 Indirect Opex consists of both Business Support Costs (BSC) and Closely Associated Indirects.

3.95 The ET Annex sets out the modelling approach we adopted in deriving our proposed allowances. Our Transmission BSC model of choice is a CSV regression that included a GT sector dummy variable. For CAI, we are using a model that incorporates MEAV and total capex. The outcomes of the modelling for each are set out in the tables below. Note that the IT&T elements were obtained through our subject matter expert review rather than through the econometric modelling.

Table 31: Proposed BSC Allowances

Cost Category	NGET Submission	Volume reductions	Cost reductions	Ofgem Allowance
Information Technology & Telecoms (IT&T)	98.0			98.0
Property management	68.2		3.7	64.5
Audit, finance, and regulation	97.4		5.4	92.0
HR and non-operational training	29.8		1.7	28.1
Insurance	75.3		4.3	71.0
Procurement	34.5		1.9	32.6
CEO and group management	55.2		3.0	52.2
TOTAL	458.5		20.2	438.3

Table 32: Proposed CAI Allowances

Cost Category	NGET Submission	Volume reductions	Cost reductions	Ofgem Allowance
Operational IT & Telecoms	87.3			87.3
Project management	487.8	117.4	98.9	271.7
Network design and engineering	64.1	15.4	13.0	35.7
System mapping	-			-
Engineering management and clerical support	222.5	53.5	45.1	123.9
Network policy (including R&D)	12.8	3.1	2.6	7.1

Cost Category	NGET Submission	Volume reductions	Cost reductions	Ofgem Allowance
Health, safety, and environment (HSE)	7.6	1.8	1.5	4.2
Operational training	61.5	14.8	12.4	34.2
Store and logistics	8.2	2.0	1.7	4.6
Vehicles and transport	17.6	4.2	3.6	9.8
Market facilitation	0.1			0.1
Network planning	81.4	19.6	16.5	45.3
TOTAL	1050.9	231.8	195.3	623.8

3.96 Based on our assessment above, we propose to reduce NGET's indirect opex request by £446m, resulting in £1062m as part of the baseline allowance.

3.97 We consider all of the indirect opex costs to be high confidence, as we can construct reliable forecasts independent of the companies' submissions. We are proposing no BPI Stage 4 rewards for NGET in this cost category.

3.98 We are not proposing any PCDs for this cost category.

Other costs

3.99 The "other costs" category comprises cyber security costs, physical security costs and pension costs.

3.100 We are not publishing information on cyber costs due to the associated security issues. NGET will receive a report on their submission from Ofgem's cyber-security team.

Physical Security – Capex

3.101 NGET owns assets and sites that are designated as Critical National Infrastructure (CNI). The Secretary of State has initiated the Physical Security Upgrade Programme (PSUP), a BEIS-led national programme to enhance physical security at CNI sites.

3.102 The level of security at each site and the type of solution required is determined externally and must adhere to BEIS PSUP Guidance Document and Centre for the Protection of National Infrastructure (CPNI) High Level Security principles.

3.103 NGET has proposed installing new PSUP solutions at two sites during RIIO-2, as per CPNI requirements. The forecast cost is £24.42m.

3.104 Due to PSUP assets reaching the end of their asset lives during RIIO-2, NGET has proposed a programme of rolling asset replacement with a forecast cost of £3.02m.

Approach to assessment

3.105 We assessed the needs case for a PSUP solution at both new sites – the sites designated as CNIs and the type of solution required at each site is externally determined by BEIS, so no further Ofgem assessment was required.

3.106 We based our cost assessment on average actual incurred historical costs of delivering PSUP projects during RIIO-1, a bottom-up assessment of the main cost drivers and an assessment of NGET's unit cost and volume assumptions.

3.107 We propose to accept justification for the full scope of work and set an allowance of £25.27m.

Table 33: PSUP capex

Physical Security Capex	NGET Baseline request (£m)	Ofgem initial determination (£m)
New sites	24.42	22.5
Asset refresh	3.02	2.77

New sites

3.108 NGET's Mains Work Contractor costs are based on our 2018 re-opener decision and we accept these costs as efficient.

3.109 Based on the information submitted and an assessment of these costs from other projects, we do not accept NGGT's assumption for General Items and Preliminaries (GIPs) (10%), Project Management (22.5%) and Risk (14%). We maintain our position at the 2018 re-opener and set GIPs, Project Management and Risk costs at 8%, 15% and 10% respectively.

Asset refresh

3.110 We accept NGET's justification for a rolling asset replacement programme and agree with the proposed asset lives of seven years for IT assets and fifteen years for Technical assets. However, we do not agree with a forty-five year asset life for Civils assets and believe maintenance and a fix-on-fail policy based on actual asset condition would be more appropriate.

3.111 NGET has used historical actual costs and tendered quotations to reach its view on unit costs, and we accept NGGT's submitted unit costs.

3.112 We do not accept the justification for NGET's Project Management and Risk assumptions and have revised these costs in accordance with para 3.108 above.

Physical security PCD

Output parameter	Consultation position
Description and purpose of the deliverable	PSUP upgrades at a specified number of sites[54]
Expected timing of delivery	End of RIIO-GT2
Totex baseline allowances	£22.5m
Accountability mechanism	RRP
Proposed approach to allowance clawback	Ex post assessment of delivery at close-out

3.113 As the requirement to implement PSUP solutions at NGET's sites is externally determined and could potentially change during the price control, we propose attaching this funding to a PCD so that NGET is only funded for work that is actually delivered.

3.114 The proposed scope of the PCD is any sites NGGT is funded to upgrade but no longer require a PSUP solution due to being removed from BEIS' CNI list. NGGT will return the unspent allowance in full.

Physical Security - opex

3.115 PSUP opex is required for maintenance and fault repair of PSUP assets, 24/7 monitoring of PSUP sites through an Alarm Receiving Centre (ARC), and management of communication infrastructure between the ARC and PSUP sites.

[54] Site and volume details are confidential due to these sites being designated critical national infrastructure.

3.116 NGET has requested £17.19m across RIIO-2 for its PSUP opex costs. We are proposing to accept these cost in full.

Table 34: PSUP opex

Cost	NGGT Baseline request (£m)	Ofgem initial determination (£m)	Rationale for our decision
PSUP Opex	17.19	17.19	We accept NGGT's proposed unit cost based on historical RIIO-1 costs.

3.117 We undertook a qualitative assessment of NGGT's proposal in order to identify the key cost drivers and assess NGGT's cost assumptions.

3.118 We used the historical actual RIIO-1 PSUP Opex costs and volumes in order to determine a unit cost per site. Although our modelled unit cost was slightly lower than NGET's submitted unit cost, we accept that due to changes in the CNI list during RIIO-1 and changes to the ARC requirements early in the price control that costs from the beginning of RIIO-1 may not be reflective of future costs.

3.119 NGET has demonstrated efficiency savings relative to recent actual incurred PSUP opex costs and we accept NGET's view of unit costs, and propose to allow the requested amount in full.

3.120 As the costs are all based on historical costs for installing PSUP across all sectors, we consider all of these costs to be high confidence. There are no BPI stage 4 rewards for this cost category.

3.121 There are no PCDs for this cost category.

Operating efficiency adjustment

3.122 We propose to apply our operating efficiency adjustment in line with the process set out in the ET Annex and the Core Document. This has resulted in a downward adjustment of NGET's totex allowance of £248m.

Consultation questions on Chapter 3

NGETQ11. Do you agree with our proposed allowances in relation to load related capex? If not, please outline why.

NGETQ12. Do you agree with our proposed allowances in relation to non-load related capex? If not, please outline why.

NGETQ13. Do you agree with our proposed allowances in relation to non-operational capex? If not, please outline why.

NGETQ14. Do you agree with our proposed allowances in relation to network operating costs? If not, please outline why.

NGETQ15. Do you agree with our proposed allowances in relation to indirect operational expenditure? If not, please outline why.

NGETQ16. Do you have any other comments on our proposed allowances for NGET?

4. Adjusting baseline allowances

Introduction

4.1 In this chapter we provide our views on two main areas:

- Firstly, we set out the NGET-specific parameters for the UMs, detailed in our ET Annex, which apply to ET sector as a whole.
- Secondly, we set out our views on the bespoke UMs that NGET proposed in its Business Plan, and any bespoke UMs that we propose to apply to NGET.

Common UMs

4.2 The common UMs that we are proposing for all companies in RIIO-ET2 are set out in Table 35. Further details on these UMs are set out in the ET Annex.

Table 35: Proposed common UMs applicable to NGET

UM Name	UM type
Cross-Sector UMs	
Ofgem Licence fee	Pass-through
Business rates	Pass-through
Inflation indexation of RAV and allowed return	Indexation
Cost of debt indexation	Indexation
Cost of equity indexation	Indexation
Real Price Effects	Indexation
Tax liability allowance	Re-opener
Pensions (pension scheme established deficits)	Re-opener
Physical security	Re-opener
Cyber resilience IT	Re-opener
Cyber resilience OT	Re-opener
Information Technology and Telecoms (IT&T)	Re-opener
Net Zero	Re-opener
Coordinated Adjustment Mechanism	Re-opener
Common UMs across ET Sector	
Opex escalator	Indexation
Generation and Demand connections	Volume Driver
Shunt Reactors	Volume Driver
Large Onshore Transmission Projects (LOTI)	Re-opener
Pre-construction Funding (PCF)	Re-opener
Medium Sized Investment Projects (MSIP)	Re-opener
Visual amenity in designated areas provision	Re-opener

Bespoke UMs

4.3 We invited companies to propose bespoke UMs with suitable justification in our SSMD[55] We have considered the extent the supporting information 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; and
- how any drawbacks may be mitigated to deliver value for money and efficient delivery.

4.4 We also considered whether the uncertainty was regionally specific, or industry wide, to assess whether a common re-opener could be more appropriate. You can find the background and our assessment approach in our Core Document.

4.5 In this section, we provide our views on all of the bespoke outputs that NGET proposed in its Business Plan, and any that we propose to apply to NGET.

4.6 For full details on the bespoke proposals, refer to NGET's Business Plan submission.

4.7 The table below summarises the bespoke UM proposals that NGET submitted as part of its Business Plan and outlines our consultation position.

Table 36: NGET's bespoke UM

[55] Paragraph 6.7, ET Annex.

Output name and description	Consultation position
UMs proposed by NGET	
Boundary capability: NGET proposed a volume driver mechanism to address the uncertainty around the future boundary capability projects below £100m whose needs case may emerge during RIIO-ET2.	**Reject:** We propose instead to use PCDs for any non-delivery of projects accepted in baseline (see Chapter 2) and the MSIP re-opener for future projects (See ET Annex). See further down this chapter for the rationale of our proposal.
Facilitate competition (pre-consents): NGET proposed a volume driver to adjust its allowances for the delivery of planning consents for contestable projects.	**Reject:** We do not consider that a volume driver approach is appropriate for these types of costs, given the volatility with which the 'need' for the projects can change. We consider that the policy intent of this proposal is covered by our proposed common Pre-Construction Funding (PCF) UM, detailed in our ET Annex.
Generation and demand connections: NGET proposed volume driver mechanism for costs associated with generation connection.	**Accept:** With adjustment to form a common volume driver design for all three TOs (See further detail in ET Annex) with company-specific parameters as below Generation/demand: £8k/MW, £8k/MVA Overhead line: £1.74m/km Cable: £5m/km It should be noted that we have significant reservations around these values, as in particular, the OHL and cable coefficients are driven by very few data points. These values will be subject to further review between now and Final Determinations.
System operability (voltage): NGET proposed an up/down re-opener to manage uncertainty in the provision of voltage support on the transmission network as requested/delayed/cancelled by the ESO.	**Accept as common UM:** See ET Annex, MSIP re-opener.
Low voltage substation re-builds (embedded generation): NGET proposed a volume driver to provide funding for the extent of low voltage rebuilding (substations or individual assets) required due to changes in the level of embedded generation connecting to the network identified after a whole system assessment (and recommendation that a transmission solution is required).	**Reject:** NGET has not demonstrated that the expenditure (to maintain fault clearance capacity) is clearly beyond BAU. Further information is requested from all TOs on the wider implications of the fault level issue. We seek credible examples, analysis and robust evidence to support the development of a pan-TO solution (including further detail on triggers).
Protection and control: To manage the implications of changes in inertia on protection systems, NGET proposed to undertake a comprehensive investigation of device performance to allow for mitigations to be defined. Based on the results of the study, NGET proposed a mechanism to fund	**Reject:** We consider relay monitoring and setting changes to form part of a rolling program of works expected to be performed at regular intervals as part of BAU. There is insufficient justification that these proposals goes beyond BAU and available funding

the potential replacement of relay settings at an initial estimated cost of £90m.	routes. We have proposed baseline funding for further study works.
Harmonic filtering: NGET proposed a UM to allow the coordination of harmonic design and the building of cheaper harmonic filters following engagement and agreement with customers.	**Accept as common UM:** See ET Annex, MSIP re-opener.
System operability (other ESO requirements): NGET proposed a UM to cover a situation where an ESO Whole System assessment indicated that a Transmission solution would be best for consumers.	**Accept as common UM:** See ET Annex, MSIP re-opener.
Extreme weather: NGET proposed a UM to manage additional requirements for site protection that may arise from changes to ETR138 within the T2 period.	**Accept as common UM:** See ET Annex, MSIP re-opener.
Black Start: NGET proposed a UM to manage changes to site requirements that may occur in period due to the review of Black Start standards currently underway by BEIS.	**Accept as common UM:** See ET Annex, MSIP re-opener.
Ensuring a resilient electricity network: NGET proposed a UM to cover works to enhance the overall levels of resilience in the network from resulting engagement with stakeholders or from additional threats that could arise in RIIO-2.	**Reject:** There is insufficient justification that the enhancements to the overall levels of resilience is over and above work that would be classified as BAU. Therefore, we are rejecting the proposal for a re-opener
SF6 asset intervention: NGET proposed a UM to cover the costs of a large-scale programme of intervention works on network assets containing and leaking SF6.	**Reject**: We propose to set a PCD instead, see Chapter 2.
Urban improvement provision: NGET proposed a £50m allowance over RIIO-2 for projects that improve transmission assets (eg reduce visual impact) or public spaces in the top 30 per cent most deprived urban areas.	**Reject:** See further down this chapter.
Net zero: NGET proposed a re-opener to account for changes during RIIO-2 related to the UK's Net Zero ambitions.	**Reject:** We do not consider that it is necessary to have company-specific re-openers related to the UK's Net Zero ambitions. This is because we propose to introduce, and are consulting on, a system-wide net zero re-opener in the price controls spanning the gas and electricity sectors so that these can respond flexibly to changing technological and policy developments in the path to Net Zero. Further details on our proposals to make the RIIO price controls more adaptive to deliver Net Zero are set out in our Core Document.
Innovation plan: NGET proposed a re-opener in 2022 to, if necessary, change	**Accept as common UM:** See Chapter 5 and Core Document, Innovation chapter.

their innovation plan to respond to respond to fast changing nature of decarbonisation and the changing needs of their stakeholders.	We are proposing to provide NGET with RIIO-2 NIA funding and the opportunity to access the Strategic Innovation Fund. Both of these innovation funds will enable NGET to respond flexibly to energy system transition innovation challenges during the course of the RIIO-2 price control.
Real price effects (RPEs) for plant, materials and equipment: NGET proposed the use of ex-ante RPEs to reflect their view of the impact of inflation (beyond CPI) on the main cost drivers within their business.	**Reject:** We propose to be adopting our view of approporiate RPEs, but as decided in the SSMD, these will not be on an ex-ante basis but will be trued-up through the annual iteration process.
UMs proposed by Ofgem	
Net-zero carbon capital construction: NGET proposed a £2.5m PCD for offsetting the emissions it cannot eliminate technically or cost effectively.	We propose to adjust NGET's PCD proposal as an UM. See further down this chapter.

Reject: Volume driver for boundary capability

Background

4.8 NGET proposed a volume driver mechanism to address the uncertainty around the boundary capability projects below the £100m threshold. NGET noted that the volume drivers in its RIIO-ET1 funding for boundary capability works did not reflect well the actual outturn costs. In its RIIO-ET2 business plan, it provided a forecast total underspend in ET1 of 45% or £1120m against the allowances derived from the volume driver mechanism for boundary capability. In subsequent NGET submissions, this underspend was revised to £677m.

4.9 Based on information provided by NGET in its business plan and subsequent submissions, we understand that apart from the cost saving impact of an innovative technical solution, most of the significant underspend was because the assumptions made at the time of calculating its ET1 volume drivers turned out to be no longer valid. Some of the reinforcement works NGET undertook to deliver boundary capability had not been included in the portfolio used for calculating its ET1 volume drivers. Some other projects delivered boundary capability increases significantly higher than previously modelled, due to changes in the wider system background such as increase in volumes of interconnection and embedded PV generation in relevant regions.

4.10 For RIIO-ET2, NGET proposed to continue to use volume drivers with parameters set ex-ante for boundary capability, but to modify the structure of ET1's single-driver for each boundary to a structure with multiple drivers for route works (eg

overhead lines and underground cables) and non-route works (eg substation). NGET's volume driver proposal contains a £/ln(MW) unit cost allowance for non-route, and £/ln(MWkm) and £/km for route works.

4.11 NGET explained that its proposal was supported by statistical analysis on a large number of combinations of different technical options to deliver boundary capability. It has not provided Ofgem with detail of these technical options.

Consultation position

4.12 We propose to reject NGET's volume driver proposal. Instead we propose to use PCDs for any non-delivery of projects that are accepted in baseline (as set out in Chapter 2) and the MSIP re-opener for future projects (as set out in ET Annex).

Rationale for consultation position

4.13 We note the high degree of uncertainty in the relationship between efficient costs and outputs, largely resulting from a wide range of potential engineering solutions to deliver outputs and the high dependence on changing circumstances. In addition to the volatility in NGET's ET1 works, currently there is also a high degree of variability in the boundary capability technical solutions recommended by the NOA process from the 2019 report to the 2020 report.

4.14 We acknowledge that there appear to be a large number of combinations of potential technical solutions modelled by NGET in its statistical analysis. Also, NGET's modelling result indicated that its proposed ET2 volume drivers, if applied to the ET1 situation, would have been less affected by the factors that significantly disturbed ET1 volume drivers. However, based on the limited information provided by NGET, we have not been able to scrutinise the range of technical solutions modelled and assess how well they represent efficient projects that could materialise in RIIO-ET2 and their potential impact on boundary capability. We are therefore not convinced that NGET's proposed volume drivers would address relevant uncertainty with fair allocation of risks and rewards in the interest of consumers.

4.15 Our alternative proposal for all the TOs consists of two parts – dealing with non-delivery of projects funded through baseline allowances and funding for projects whose needs case emerges later.

4.16 For projects funded through baseline allowances, we propose to use project PCDs to claw back allowances for non-delivery of the work. In cases of the TO changing

the solution to achieve equivalent outcomes, we propose to consider the reason for such change.

- If it is due to change in external circumstances or the TO taking a different engineering solution that should be reasonably within the range of its consideration at the time of our setting the PCD, then we propose to adjust allowances to ensure that consumers do not pay more than necessary.

- However, if the TO can provide sufficient evidence that the change is due to genuine innovation, then we would maintain the original allowance and leave it to share with consumers the cost saving through TIM.

4.17 For projects whose needs case emerges later during RIIO-ET2, we propose that they should be assessed through the MSIP re-opener, set out in the ET Annex. This would consider:

- retrospective funding for delivery of new transmission solutions that have subsequently emerged as a result of the annual NOA process and have been instigated since the start of the price control; and
- forward funding for new projects that the licensee expects to instigate in the remaining price control period.

4.18 Our proposal of using PCD and re-opener mechanisms for boundary capability projects seeks to retain the ability for any licensee to apply a flexible approach to the identification, development and delivery of the optimal transmission solution for projects while managing the evolving outputs arising from the annual NOA process. This flexibility, and the ability to share potential cost risks with consumers, will enable consideration of a range of investment options, including deviations from established network solutions within the NOA 'toolkit' (ie non-traditional solutions). We consider this better protects consumers interests while maintaining incentives for efficiency and innovation.

4.19 We do not consider the introduction of a re-opener window would delay the progress of required investments. All projects that have reached a mature and stable status will be provided baseline funding. The funding route would cover most if not all investments required to proceed before the re-opener window. Less certain projects that currently sit outside of baseline funding will be covered by retrospective funding in the re-opener decision if the needs case matures and optimum design solution emerges. We have not received evidence to indicate that

the use of a funding route more directly linked to actual engineering work on individual projects would lead to investment delays.

Consultation questions

NGETQ17. Do you agree with our proposal to use a funding route more directly linked to actual engineering work on individual projects, and to provide a further route for funding through a re-opener window?

Reject: Urban Improvement Provision

Urban Improvement Provision	
Purpose	To allow in-period review of investment to improve NGET's assets or public spaces in the top 30 per cent of the most deprived urban areas.
Benefits	Improved assets or public spaces in deprived urban communities.

Background

4.20 NGET proposed a bespoke Urban Improvement Provision (UIP) UM for projects that improve transmission assets (eg reduce their visual impact) or public spaces in the top 30 per cent most deprived urban areas.

4.21 NGET proposed an expenditure cap for the UM of £50m over RIIO-T2 based on a positive consumer willingness to pay (WTP) for visual impact mitigation in areas that are not National Parks, Areas of Outstanding Natural Beauty and National Scenic Areas.56

4.22 NGET proposed that a stakeholder-led panel would select projects and NGET would use the UM to release funds for approved projects each year following Ofgem's assessment of the efficient costs of proposals. NGET proposed a stakeholder-led approach because it considered that local stakeholders are likely to have greater knowledge of the best ways to benefit deprived urban areas.

4.23 NGET developed the proposal following challenge from its User Group on what it is doing in relation to communities. The RIIO-2 Challenge Group also supported the initiative but had concerns about the additional costs for consumers from this UM.

[56] The TOs jointly commissioned NERA to undertake a WTP study covering improvements in several service attributes, including measures to address visual amenity impacts and the provision of community activities. A summary of the study can be found here: https://www.ssen-transmission.co.uk/media/3455/consumers-willingness-to-pay-final-0107.pdf

Consultation position and rationale

4.24 We propose to reject this proposal because NGET has not provided sufficient evidence of the need for this UIP UM and of its potential costs to consumers.

4.25 Although there is stakeholder support for the UIP, we note from the WTP study that while consumers may be willing to pay for the TOs' current levels of community activities, their WTP for additional community activities was not shown to be significantly different. This could indicate that consumers expect the TOs to undertake a reasonable amount of activity but are not willing to fund through their bills additional measures at a significant cost.

4.26 In addition, NGET has not clearly set out the need for this UM, for example, any policy drivers or legislative requirements to undertake the activity that the UIP UM focus would on.[57]

4.27 Lastly, we are not satisfied that the UIP UM would be in the overall interests of existing and future consumers. NGET has estimated a £22.5m expected consumer benefit from the UIP, which it calculated by applying a benefits multiplier of 1.5 to 1 to the cost of the initiative and subtracting the costs of the initiative.[58] However, we have been unable to verify the estimated consumer benefit of the UIP proposal because NGET has not been able to provide details about:

- the projects that would be delivered;
- whether these projects would be additional to works that NGET would be required in any case to address unacceptable impact of its assets on residents; and
- how many socially deprived areas would benefit from this proposal.

4.28 In light of the above, we propose to reject this proposed UM.

Consultation questions

NGETQ18. Do you agree with our proposal to reject NGET's UIP UM?

[57] The UIP UM would focus on existing assets. There may be instances where the company has to undertake some remedial works to address issues arising from existing assets, for example, Noise Abatement Notices.
[58] By using a benefit multiplier ratio of 1.5:1, NGET are assuming that on average every pound spent under the UIP would generate £1.50 in benefits to the local economy and community.

Net-zero carbon capital construction

Net-zero carbon capital construction	
Purpose	Use-it-or-lose-it fund for offsetting emissions in order to achieve net-zero capital carbon - UM returns unused allowance to consumers.
Benefits	Meets stakeholder expectations to achieve net-zero capital carbon and ensures consumers only pay for actually offset emissions.

Background

4.29 NGET's construction projects can result in the release of emissions, called capital carbon emissions, into the atmosphere[59]. These emissions do not count towards NGET's total Business Carbon Footprint (BCF) as they are not considered Scope 1 or Scope 2 emissions[60], but if they did, they would account for c.9% of that figure.[61]

4.30 In our SSMD[62], we encouraged companies to make ambitious proposals to reduce the environmental impact of their activities through an Environmental Action Plan. Achieving net-zero capital carbon emissions is a leading environmental commitment across the energy sector and is supported by NGET's stakeholders.

4.31 NGET's Business Plan proposed a £2.5m PCD for offsetting the emissions it cannot eliminate technically or cost effectively, in order to ensure it achieves net-zero capital carbon by 2025/26. It proposes to achieve this through a variety of methods, including afforestation, reducing deforestation, supporting woodland management, energy efficiency projects and supporting community renewables.

Consultation position

Output parameter	Consultation position
Output type	Use-it-or-lose-it allowance UM
Baseline allowance	£2.5m
Proposed approach to allowance clawback	Automatic return of unused allowance

[59] For example, from the extraction of raw materials, the manufacture and installation of equipment and the transportation of equipment to and from sites.
[60] https://app.ecodesk.com/media/faqs/what-are-scope-1-and-scope-2-emissions-and-how-do-i-calculate-them/
[61] 31,000 t/CO2e
[62] Core Document, paragraph 7.23.

Rationale for consultation position

4.32 We propose to accept NGET's request for £2.5m baseline funding to offset its construction emissions, however we consider there remains significant uncertainty around what the actual cost of achieving net-zero capital carbon will be.

4.33 We acknowledge NGET's rationale for this funding, which is to ensure it meets its stakeholders' expectations in achieving net zero construction by the end of RIIO-2, and we consider the activities proposed by NGET to offset its emissions are appropriate and proportionate.

4.34 We welcome NGET's proposal to return any unspent allowance to consumers. However, we consider that providing the requested funding through a use-it-or-lose-it UM rather than a PCD to be the more proportionate way to facilitate this. This will have no impact on the actual funding and return mechanism proposed by NGET.

Consultation questions

NGETQ19. Do you agree with our proposal to provide a UIOLI allowance for offsetting capital carbon emissions?

5. Innovation

5.1 Our SSMD and the Core Document identify the criteria that we have used to assess Network Innovation Allowance (NIA) funding requests.63 It also details our proposals for the RIIO-2 NIA Framework and the Strategic Innovation Fund.

Network Innovation Allowance

5.2 We set out below our Draft Determinations on NGET's RIIO-2 NIA funding.

Consultation position

Network Innovation Allowance	Company proposal	Consultation position
Level of NIA funding	£75.6m	£49.3m *Conditional on an improved industry-led reporting framework.

Rationale for consultation position

5.3 NGET's Business Plan contained a range of NIA-related proposals. It focused on the energy system transition and addressing consumer vulnerability, with initiatives in the following innovation areas:

- Reducing carbon footprint by, for example, investigating alternatives to SF6 and considering the use of novel materials with a lower carbon footprint.
- Facilitating whole systems energy innovation by, for example, utilising the Deeside Centre for Innovation to trial gas (hydrogen and liquefied natural gas) integration and electric transport technologies.
- Facilitating decarbonisation of wider industries by, for example, working with other industries to identify and implement decarbonisation activities.
- Digitisation by investigate tools and techniques to allow the digitisation of maintenance, monitoring, and testing of equipment with automated archiving and analysis of information.
- More responsive and agile for customers by creating new assets and installation methods that can be quickly deployed and moved around the UK to support the fast connection of customers.
- Addressing vulnerable consumers by, for example, collaborating with SMEs to understand how NGET can support vulnerable consumers.

[63] SSMD Core Document, paragraph 10.62; Draft Determinations Core Document, Chapter 8

- Step change in health and safety by, for example, lead researching into new safety technology for the whole energy industry.

5.4 NGET's NIA proposals focus on initiatives that appear either high risk or would not deliver benefits during the price control period. Based on this, we have reasonable confidence that the projects that will be taken forward will require the NIA in order to progress. Over RIIO-2, it is for NGET to determine which projects it will undertake and for each, it will need demonstrate why the project cannot be funded through baseline totex, why it needs to be funded via the NIA, and how it supports the energy system transition or addressing consumer vulnerability. This will be part of the RIIO-2 NIA governance arrangements.

5.5 Our assessment of NGET's Business Plan against the criteria from our SSMD and the Core Document is set out in the table below.

Table 37: Assessment of NGET's Business Plan against NIA criteria

SSMD / Core NIA criteria	Ofgem view
Undertaking other innovation as BAU	**Does not satisfactorily meet the criterion:** we were disappointed with NGET's limited ambition to fund innovation within BAU activities and were therefore unconvinced that it has a strong culture of innovation throughout the business. The activity areas identified for innovation within BAU activities were focused on improving behaviours (such as embedding a culture of innovation, improving collaboration and being more transparent) rather than commitments to take forward innovative projects. This criticism of their commitment to take forward innovation in BAU activities is consistent with feedback from NGET's User Group.
Application of best practices	**Satisfactorily meets the criterion, including:** evidence of the use of best practice methodologies for innovation projects with the use of an international standard for innovation management.
Processes in place to rollout proven innovation and the evidence that this is already happening	**Satisfactorily meets the criterion, including**: evidence of key learnings from RIIO-1 innovation and provides examples of rolled out projects.
Processes in place to monitor, report and track innovation spending and the evidence that this is already happening	**Does not satisfactorily meet the criterion:** consistent with our assessment of NIA requests, we do not consider that NGET has demonstrated that it has tried and tested processes in place to monitor, report and track innovation spending and benefits.

5.6 We also consider that NGET's request for NIA funding represents a substantial increase relative to RIIO-1, in which it was awarded 0.7% of base revenue as NIA funding, roughly equivalent to £10m per year. Considering some of our concerns above, we believe NGET's request for NIA funding was disproportionate, as we stated in our SSMD that companies should not rely solely on additional innovation stimulus funds but should fund more innovation in RIIO-2 as BAU using their totex allowance.[64]

5.7 Accordingly, we do not consider that NGET has justified the need for an increase in NIA funding relative to RIIO-1 and therefore do not propose to provide NGET the requested allowance. We instead propose to provide NGET £49.3m NIA funding for RIIO-2, roughly equivalent to the level of RIIO-1 funding.

5.8 As detailed in the Core Document, we propose that NIA funding is conditional on the implementation by the start of RIIO-2 of an improved, industry-led reporting framework. If this condition is not satisfied, our proposal is that we propose to not award NIA funding for RIIO-2.

Consultation questions

NGETQ20. Do you agree with the level of proposed NIA funding for NGET?

[64] SSMD Core Document, paragraph 10.16

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Appendix 1 Consultation questions

Consultation questions

NGETQ1. Do you agree that an Environmental Scorecard ODI-F would be in the interests of existing and future consumers?

NGETQ2. Do you support our proposed changes to NGET's Environmental Scorecard proposal?

NGETQ3. Do you agree with our proposal to reject the Accelerating Low Carbon Connections ODI-F?

NGETQ4. Do you agree with our consultation position to reject the 'RIIO-T2 System Outage Management Proposals to Reduce Constraint Costs'?

NGETQ5. Do you agree with our proposals on the PCDs? If no, please outline why.

NGETQ6. Do you agree with our proposed approach to facilitating NGET's transition to an EV fleet?

NGETQ7. Do you agree that there is a need for a SF6 asset intervention PCD, and do you agree with our rationale for making this mechanism a PCD rather than a UM?

NGETQ8. Do you agree with our proposals on the CVPs? If no, please outline why.

NGETQ9. Do you agree with our consultation position to accept (subject to eligibility) NGET's caring for the natural environment CVP? Do you agree with our proposal to re-quantify the value of the CVP?

NGETQ10. Do you agree with our proposal to reject NGET's SO:TO optimisation CVP?

NGETQ11. Do you agree with our proposed allowances in relation to load related capex? If not, please outline why.

NGETQ12. Do you agree with our proposed allowances in relation to non-load related capex? If not, please outline why.

NGETQ13. Do you agree with our proposed allowances in relation to non-operational capex? If not, please outline why.

NGETQ14. Do you agree with our proposed allowances in relation to network operating costs? If not, please outline why.

NGETQ15. Do you agree with our proposed allowances in relation to indirect operational expenditure? If not, please outline why.

NGETQ16. Do you have any other comments on our proposed allowances for NGET?

NGETQ17. Do you agree with our proposal to use a funding route more directly linked to actual engineering work on individual projects, and to provide a further route for funding through a re-opener window?

NGETQ18. Do you agree with our proposal to reject NGET's UIP UM?

NGETQ19. Do you agree with our proposal to provide a UIOLI allowance for offsetting capital carbon emissions?

NGETQ20. Do you agree with the level of proposed NIA funding for NGET?

Appendix 2 Baseline with Outputs in RIIO-T2

This appendix lists the outputs associated with all projects within the proposed baseline completing in the RIIO-ET2 period, and the company requested funding.

Table 38: Generation connections completing in the RIIO-ET2 period

Site	Output	Scope and Delivery Date	Requested allowance (within ET2)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
TOTAL	**15.265GW**		**£139.22m**

Table 39: Demand connections completing in the RIIO-ET2 period

Site	**Output**	**Scope and Delivery Date**	**Requested amount (within ET2)**
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
TOTAL	**11 SGTs** **(9 at existing substations; 2 at new GSP substation)** **2 new GSP substations**		£113.12m

Table 40: Wider works projects completing in the RIIO-ET2 period[65]

Site	**Output**	**Scope and delivery date**	**Requested amount (within ET2)**
Burwell Main 400kV substation (NOA code: BMM2)	Primary deliverable MW increase in capability by system boundary: EC5: 550MW LE1: 290MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2024	Two new 225 MVAr capacitors to be installed at Burwell Main 400kV substation with their own Circuit Breakers.	[REDACTED]
Bolney and Ninfield 400kV substations	Primary deliverable MW increase in capability by system boundary: SC1: 2120MW	A new MSC and SVC/STATCOM pair will be installed at both Bolney and	[REDACTED]

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[65] The recommendations made by the latest NOA 2019/20 process indicates that some of the schemes included in the proposed baseline plan (based on NOA 2018/19 recommendations) are either no longer recommended or have been 'replaced' by alternative options. The table presents our view of the projects contained within NGET's Business Plan updated to reflect the latest NOA recommendations. Updates have not been made to the timing of scheme delivery or profile of forecast spend for each scheme in the proposed baseline plan that have received a positive signal in the latest NOA process; the values are based on the data provided as part of the December BPDT submission.

Site	Output	Scope and delivery date	Requested amount (within ET2)
(NOA code: BNRC)	SC2: 400MW B15: 1726MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2024	Ninfield 400kV substations. The current assumed rating requirements are: 1.225MVAr MSC 2.-100/+225MVA SVC Each element requires a new bay and circuit breaker at the relevant substation, which requires an extension of the existing busbars.	
Creyke Beck to Keady route (NOA code: CBEU)	Primary deliverable MW increase in capability by system boundary: B8: 580MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2027	Increase the ratings of the Creyke Beck circuits into Keadby.	[REDACTED]
Elstree to Sundon circuit (NOA code: SER1)	Primary deliverable MW increase in capability by system boundary: B14: 390MW SC1: 1970MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2025	Installation of a larger rated conductor on the Elstree – Sundon 1 circuit to resolve thermal overloading of the Elstree – Sundon 400kV OHL circuits	[REDACTED]
Harker SGT5 Replacement (NOA code: HEA2)	Primary deliverable MW increase in capability by system boundary: B6: 409MW B7a: 68MW Secondary deliverable Scope of works presented in the relevant EJP.	In-situ replacement of the Harker 400/275kV interbus transformer SGT 5 with a new unit rated at 1100MVA.	[REDACTED]

Site	Output	Scope and delivery date	Requested amount (within ET2)
	All outputs are to be delivered on or before 31 March 2025		
Harker SGT6 Replacement (NOA code: HEAU)	*Primary deliverable* MW increase in capability by system boundary: B6: 550MW B7: 236MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2024	In situ replacement of the Harker 400/275kV interbus transformer SGT 6 with a new unit rated at 1100MVA	[REDACTED]
Hinkley to Bridgewater route (NOA code: HBUP)	Primary deliverable MW increase in capability by system boundary: B13: 960MW SC1: 770MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2027	Uprating of the Overhead Line between Hinkley and Bridgewater from 275 to 400kV and a diversion made to the new 400kV Shurton substation.	[REDACTED]
Thornton 400kV substation (NOA code: THS1)	Primary deliverable MW increase in capability by system boundary: B8: 586MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2026	Install two 2000MVA series reactors between the busbars at Thornton 400kV substation.	[REDACTED]
North East Region (NOA code: NEMS)	Primary deliverable MW increase in capability by system boundary: B7: 211MW B7a: 1035MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2025	Installation of 3 x 200MVAr MSCs within the North East Region	[REDACTED]

Site	Output	Scope and delivery date	Requested amount (within ET2)
Keady – West Burton 2 circuit (NOA code: KWHW)	Primary deliverable MW increase in capability by system boundary: B8: 346MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2024	To increase the thermal capability of the Keady – West Burton 2 circuit by allowing the route to be run at a higher temperature. Increase to operate at 75 degrees.	[REDACTED]
Harker to Stella West route (NOA code: HSS2)	Primary deliverable MW increase in capability by system boundary: B6: 305MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2026	Install Power Flow Control technology along the Fourstones – Harker, Fourstones – Stella West & Harker – Stella West 275kV circuits	[REDACTED]
North of Harker (NOA code: MHPC)	Primary deliverable MW increase in capability by system boundary: B6: 600MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2023	Install power flow controllers on the circuits North of Harker that cross the B6 boundary: Harker to Gretna and Harker to Moffat_2.	[REDACTED]
Bolney, Lovedean and Fleet 400kV substations (NOA code: SEEU)	Primary deliverable MW increase in capability by system boundary: SC2: 400MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2024	Reinforcement of voltage compensation equipment at three 400kV substation sites to allow existing MSCs and reactors to be switched in protection timescales: • Lovedean • Bolney • Fleet	[REDACTED]
Bramford to Braintree to Rayleigh Main circuit_2	Primary deliverable MW increase in capability by system boundary: EC5: 228MW Secondary deliverable	Replace the conductors in the parts of the existing Bramford to Braintree to Rayleigh overhead line that have not	[REDACTED]

Site	Output	Scope and delivery date	Requested amount (within ET2)
(NOA code: BRRE)	Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2023	already been reconductored, with higher-rated conductors, to increase the circuit's thermal rating.	
Rayleigh to Tilbury circuit_2 (NOA code: RTRE)	Primary deliverable MW increase in capability by system boundary: LEI: 1220MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 March 2022	Reconductoring to uprate the existing Rayleigh Main to Tilbury 400kV circuit.	[REDACTED]
Kemsley - Littlebrook - Rowdown (NOA Code: KLRE)	MW increase in capability by system boundary B15 – 3341MW SC1 – 1830MW SC3 – 1473MW All outputs are to be delivered on or before 31 March 2021[66]	Reconductoring of the Kemsley – Littlebrook circuits with a higher rated conductor	[REDACTED]
Turn-in of West Boldon to Hartlepool at Hawthorn pit (NOA code: WHT1)	Primary deliverable MW increase in capability by system boundary: B6: 771MW B7: 506MW B7a: 246MW Secondary deliverable Scope of works presented in the relevant EJP. All outputs are to be delivered on or before 31 December 2024	Turn-in of the existing 275kV West Bolden to Hartlepool circuit at Hawthorn Pit 275kV substation to create two circuits: West Boldon – Hawthorn Pit and Hawthorn Pit – Hartlepool.	[REDACTED]
TOTAL	**18.87GW**		**£200.00m**

[66] All outputs are currently expected to be delivered in T1 and the boundary transfer increase is not included in our T2 output total (18.87GW). Our assessment of the T2 costs to be incurred are included in NGET's proposed baseline funding.

Appendix 3 Baseline with Outputs Beyond RIIO-T2

This appendix lists the projects within the proposed baseline with outputs beyond the RIIO-ET2 period, and the company requested funding.

Table 41: Generation connection projects delivering outputs beyond the RIIO-ET2 period

Site	T3 output	Requested amount (within ET2)
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
TOTAL	**13.49GW**	**£119.86m**

Table 42: Demand projects delivering outputs beyond the RIIO-ET2 period

Site	Output	Content	Requested amount (within ET2)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
TOTAL	13 SGTs (3 at existing sites in T1; 10 at new GSP sites in T3)		£30.84m

Table 43: Wider works projects delivering outputs beyond the RIIO-ET2 period

Site	Description of expected output	Expected delivery date	Requested amount (within ET2)
Bramford and Twinstead route[67] (NOA code: BTNO)	Primary deliverable MW increase in capability by system boundary: EC5: 488MW LE1: 1330MW Secondary deliverable Scope of works presented in the relevant EJP.	All outputs are to be delivered on or before 31 March 2027[68]	[REDACTED]
Bramley to Melksham (NOA code: MBRE)[69]	Primary deliverable MW increase in capability by system boundary: B12a: 1416MW Secondary deliverable Scope of works presented in the relevant EJP.	All outputs are to be delivered on or before 31 March 2028	[REDACTED]
North Wessex[70]	Visual Impact Provision	Mitigation works to be delivered on or before 31 March 2024	[REDACTED]
Hinkley Point – Taunton and Hinkley Point – Taunton – Exeter[71] (NOA code: THRE)	Primary deliverable MW increase in capability by system boundary: SC1: 1798MW Secondary deliverable Scope of works presented in the relevant EJP.	All outputs to be delivered on or before 31 March 2029	[REDACTED]
TOTAL	**5.032GW**		**£150.7m**

[67] Install a double circuit between Bramford and existing Twinstead Tee point. The existing Pelham – Braintree and Bramford - Braintree circuits will be coupled together at Twinstead so that the existing circuits form a new Bramford - Pelham double circuit.
[68] We note that the Earliest in Service Date stated in the latest NOA is 2028.
[69] Replace the conductors in the double circuits between Bramley to Melksham circuits with higher-rated conductors to increase their thermal ratings.
[70] Up-rate a short section of cable as part of the North Wessex Downs Visual Impact Provision scheme in anticipation of the future NOA requirement to deliver the Melksham – Bramley overhead line (MBRE) project.
[71] Reconductoring of the existing ZZ route Hinkley Point – Taunton 1 & 2 circuit and Hinkley Point – Taunton – Exeter circuit to increase the thermal capability.

Appendix 4 Proposed views following BPI Stage 1 assessment

This appendix sets out further details to support our proposed consultation position that NGET failed Stage 1 of the BPI. This focusses on cost and engineering aspects of the Minimum Requirements, as set out in our Business Plan Guidance (BPG). Detail on our proposed overall BPI Stage 1 position, and our rationale, can be found in our Core Document.

Table 44: Consultation proposals

Minimum Requirement	**Area:** Protection and control **Submitted totex:** £489m	**Area:** OHL Conductors and Fittings **Submitted totex:** £621m	**Area:** Circuit Breakers and Bays **Submitted totex:** £264m
3.10. In proposing costs for operating and developing their networks, we expect companies to explain their costs/workload forecasts, particularly where these diverge from historical trends.	There is a clear and unexplained step change in volumes and costs. NGET fails to explain the workload forecasts. In one protection asset category volumes move from intervening on 14 units per year to 146 units per year. NGET states that this is driven by Asset Condition and OEM Obsolescence. NGET does not provide evidence to substantiate the asset condition on the proposed range of assets, nor does it detail why lack of manufacture support cannot be managed, and requires replacement of equipment. This step change in volume/costs is not justified, and the reasons for divergence	There is a clear and unexplained step change in volumes and costs. NGET fails to explain the workload forecasts. In T1 NGET replaced 143km of conductors per year and 144km of fittings per year. In RIIO T2 NGET proposes to replace 259km of conductor per year and 208 of fittings per year. The RIIO-T2 plan represents an increase in OHL conductor and OHL fittings replacement volume by 83% and 45% respectively over period, compared to RIIO-T1. This increase in volumes is not fully justified, and the reasons for divergence from historical RIIO T1 volumes is not considered.	There is a clear and unexplained step change in volumes and costs. NGET fails to explain the workload forecasts. In RIIO T1 NGET has made an average of 86 bay interventions per year. For the RIIO T2 NGET propose 278 bay interventions per year. These bay interventions are driving the majority of the expected spend in this paper. >£200m. This equates to 27% of the total bay assets population. NGET states that age is the intervention driver- since many bays were installed in the 1960s and 1970s, there is a large percentage of the population beyond 50 years old requiring an intervention. NGET has not explained why 50 years is the critical age that determines the need for intervention.

Minimum Requirement	**Area:** Protection and control **Submitted totex:** £489m	**Area:** OHL Conductors and Fittings **Submitted totex:** £621m	**Area:** Circuit Breakers and Bays **Submitted totex:** £264m
	from historical RIIO T1 volumes is not considered. Note that there are multiple protection components covered in this EJP. Key examples are used below.		
3.10. In particular, we expect companies to provide information in their Business Plans on: - cost drivers - consideration of options - justification of costs, including the proposed profiling of costs - how efficiency and innovation will be used to reduce costs	NGET has not justified the additional costs. The largest single component of the proposed works is the substation control system replacements with NGET proposing 48 interventions for £120.6m. In RIIO T1 planning NGET forecast refurbishment of 63 SCSs and full replacements on the remaining 80, in delivery NGET expects to achieve 140 SCSs refurbishment and only fully replaced 3 over RIIO-T1. NGET states that in the RIIO-T1 period it achieved significant cost efficiency (64% reductions in cost per unit versus allowances) for SCS. In RIIO T2 NGET is forecasting a significant increase in costs per unit between RIIO-T1 and RIIO-T2. NGET states that this is driven by the significant change in intervention mix required for SCS in RIIO-T2 when compared to RIIO-T1. RIIO-T1 there are	NGET did not consider all credible options, specifically T1 volumes. We expect NGET to propose the 'do nothing and/or do minimum' option and the preferred options. For this work area NGET proposed the following options. 1) Do Nothing, ie 0km of Cable and 0kM of fittings 2) Full Refurbishment NOMS volume ie 1494km conductor, 496km fittings 3) Full refurbishment 1296km conductor and 1040km fittings There are 14,177km of OHL circuits on the NGET network, the proposed do nothing option is not credible. A baseline RIIO-T1 period equivalent volume ie approx. 745km, or minimum volume should be developed and used as a baseline for the CBA. NGET states that increase in volumes over the RIIO T2 period is reflective of an ageing population and a need to carry out an	NGET did not consider all credible options, specifically T1 volumes. NGET did not consider or rule out a deferral of percentage of bay interventions into T3, NGET has not explained why all proposed bay interventions must be delivered in the RIIO T2 period. NGET states 'Age is the intervention driver- since many bays were installed in the 1960s and 1970s, there is a large percentage of the population beyond 50 years old requiring an intervention. A total of 5,823 interventions have been identified based on the age profile (see Figure 8 below). This equates to 27% of the total bay assets population, this is not a credible option from a delivery and outage perspective. NGET considers two options - full replacement of 5,823 assets or refurbishment of more than 3000 bay assets. A credible T1 derived option intervention on 2150 assets should have been developed to explore the

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	140 SCS upgrades and 3 full system replacements while in RIIO-T2 there are 31 upgrades and 17 full replacements. There is limited rationale to explain why the intervention mix has changed. In RIIO T2 the cost for SCS upgrade has doubled from £0.6m to £1.2m and the cost for SCS replacement is 4m. No justification is given for these costs, nor lack of efficiency or learning from T1, even though NGET achieved significant cost efficiency savings in T1.	increased level of interventions to maintain a similar level of network risk to the RIIO-T1 period. A credible T1/min volume derived option should have been developed to explore the risk trade off between RIIO T1 or minimum volumes and proposed RIIO T2 volumes. The proposed intervention strategy is skewed toward the high volume case as no credible baseline was provided. In simple terms NGET options are do the maximum possible or do nothing.	risk trade off between RIIO T1 volumes and proposed RIIO T1 T2 volumes. NGET's preferred option involves refurbishment of more than 3000 bay assets (excluding 132kV and below and surge arresters where replacement is the only option) identified for intervention in RIIO-T2. Advantages of this option include reduced system access / outage requirements, reduced resource requirements and overall lower cost of intervention. This option ensures that the risks and issues associated with disconnections and earth switches are addressed in the most economic manner. The link between age, asset condition and the scope of the refurbishment of more than 3000 bays, is not clear. For bay equipment the structured narrative does not provide a clear demonstration that this work scope is valid and provides value for money.
3.12. Business Plans must clearly set out the key drivers of expenditure for the RIIO-2 period - for example, growth in demand, conditions of assets/utilisation, legislative	Our proposed position for consultation is that the information provided fails to meet this minimum requirement. For example: NGET states that in order to	NGET states that the key driver for expenditure is to maintain a flat risk profile when measured by the NOMS process where conditions of assets/utilisation are secondary. We do not accept that meeting an arbitrary NOMS targets is a	Our proposed position for consultation is that the information provided fails to meet this minimum requirement. For example: - NGET failed to provide satisfactory evidence of the drivers for investment, ie for bay equipment

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requirements, and any other relevant drivers.	meet stakeholder expectations to maintain network reliability, we must increase the volume of interventions in RIIO-T2, but NGET failed to provide satisfactory evidence of the drivers for investment, ie that the reliability of the existing protection equipment is having a detrimental or material impact on the network reliability. This information had to be requested via supplementary questions. The core NGET submission is concerned with managing an ageing population of assets using a bespoke method to determine asset health and replacement priority. The link to reliability is not clear, and the process to determine the intervention priorities is not clear. NGET has failed to provide clear, substantiated evidence to support the proposed interventions.	sufficient driver for the proposed expenditure increase volume by 83% (cable) and 45% (fitting). Using the NOMS process to set targets has clear limitations that are foreseeable - ie it could mislead the assessment management decision-making process by pushing a critical but healthy asset to be considered for replacement. NGET has not addressed the known and foreseeable limitations of using the NOMS process to set a target. In a significant number of proposed interventions the condition of assets does not support intervention and NGET has not provided any further justification of this subset of interventions.	NGET states that the key driver is age rather than condition or duty. It has failed to explain why the critical age is 50 years for bay equipment. Age is the intervention driver but not the limiting factor for bay equipment. - NGET has failed to provide any evidence as to why this method to determine volumes is the most appropriate and subsequent integration of methods shows that there has been limited analysis undertaken by NGET on the suitability of the methods.
3.13. Business Plans must clearly justify the need for new investment, including… the different options considered for meeting future network requirements, including the	NGET has not provided evidence of actual condition / performance to support individual P&C interventions. No assessment of alternative options for intervention has been completed and no scope of	Our proposed position for consultation is the optioneering process combined with NGET's strategy of maintaining a constant level of network risk while addressing deliverability does not allow it to address credible options	Our proposed position for consultation is that the optioneering process combined with NGET's strategy of maintaining a constant level of network risk while addressing deliverability does not allow it to address credible options such as

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cost of "doing nothing" and of "deferral" options and the associated cost benefit analysis (CBA). These options should include, where appropriate, the availability of potential market solutions to the system need, and whether any 'whole system' solutions are available. Options which are supported by LAEPs (where available) might provide a higher level of evidence	works and associated costing for individual intervention proposals has been produced.	such as replication of RIIO T1 volumes. The options presented by NGET are based on the maximum volume that can be delivered by the supply chain and not the underlying network needs.	replication of RIIO T1 volumes. The options presented are limited and not justified. It is not clear that 3000 interventions can be delivered.
3.13. Business Plans must clearly justify the need for new investment, including… for options discounted at this stage, full reasoning, detailing key assumptions and selection criteria given for exclusion	No material concern.	Our proposed position for consultation is that the optioneering is deficient, all creditable options have not been considered therefore this guidance has not been met.	Our proposed position for consultation is that the optioneering is deficient, all creditable options have not been considered therefore this guidance has not been met.
3.13. Business Plans must clearly justify the need for new investment, including… the reasons for the timing of investment under the different options considered, including expected outputs (eg the delivery of an increment in boundary capacity transfer, the delivery of an electricity link,	No material concern.	NGET has not made the case for the timing of the investment, NGET reports a significant proportion of OHL conductors and fittings as being in an acceptable condition, but with a significant degradation expected in period. The basis for OHL degradation has not been explained, and therefore the need and justification for the timing of the investments is not clear.	No material concern.

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a gas pipeline) related to the investment and year of delivery			
3.14. Business Plans must… evidence of the efficiency of their costs, for example as compared to historical benchmarks and/or benchmarking with national and international comparators	In RIIO T2 the cost for SCS upgrade has doubled from £0.6m to £1.2m and cost for SCS replacement is 4m. No justification is given for these costs, efficiency or learning from T1, even though in T1 NGET achieved significant cost efficiency savings.	No material concern.	No justification is given for these bay costs, efficiency or learning from T1
3.21. …CBAs and engineering justifications should… demonstrate evidence of structured options development, including consideration of whole system options and non-network options, where applicable, against a baseline scenario which involves the minimum level of intervention that would be required to remain compliant with all applicable regulation	No material concern.	NGET has not determined the minimum level of intervention, required to remain compliant with legislation and has not considered all credible investment decisions.	NGET has not determined the minimum level of intervention, required to remain compliant with legislation and has not considered all credible investment decisions.
3.21. …CBAs and engineering justifications should… act as a robust decision support tool, open to scrutiny and challenge in conjunction with other	In RIIO T2 the cost for SCS upgrade has doubled from £0.6m to £1.2m and cost for SCS replacement is 4m. No justification is given for these costs, efficiency or learning from	No material concern.	No material concern.

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appropriate means of justification for investment decisions	T1, even though in T1 NGET achieved significant cost efficiency savings.		
3.21. …CBAs and engineering justifications should… be transparent about assumptions, inputs and rationale for decisions, calculations and results	NGET has not been transparent about assumptions, inputs and rationale for decisions calculation and results.	No material concern.	NGET has not been transparent about assumptions, inputs and rationale for decisions calculation and results.