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Consultation

RIIO-2 Draft Determinations – Scottish Hydro Electric Transmission

Publication date	09 July 2020	**Contact:**	RIIO Team
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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 RIIO-2 Sector Specific Methodology Decision. 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 will 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 will consider all responses. We want to be transparent in our consultations. We will publish the non-confidential responses we receive alongside a decision on next steps on our website at www.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 Scottish Hydro Electric Transmission (SHET). 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.

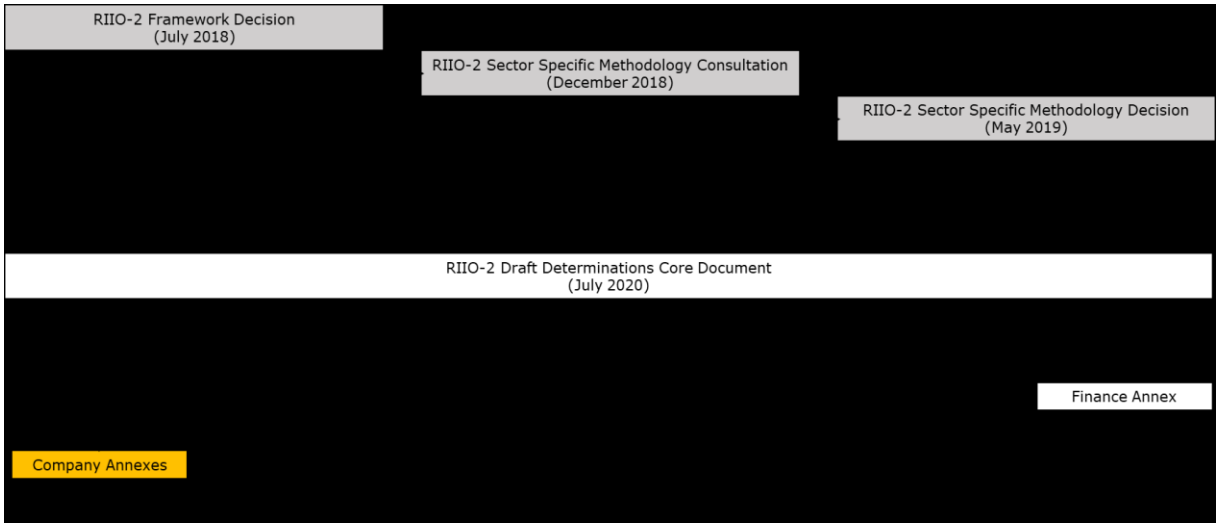
1.2 Setting allowed revenue is underpinned by a large set of proposals across output design, cost assessment, and finance. The purpose of this document is to focus on SHET and:

- 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 SHET, including:
  - baseline cost allowances;
  - parameters for common outputs;
  - bespoke Output Delivery Incentives (ODIs)[1];
  - bespoke Price Control Deliverables (PCDs);
  - 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 SHET's Draft Determinations (the RIIO-2 building blocks)?

1.4 We have structured our price control decisions 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)	RAV Carried Over from RIIO-1	Chapter 11 of Regulatory Finance Annex	Chapter 2 of ET Annex
	Common ODIs, PCDs and LOs	Chapter 4 of Core Document	Chapter 2 of ET Annex
	Bespoke ODIs, PCDs and LOs	Chapter 4 of 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	
	Tax Allowance	Chapter 7 of Regulatory Finance Annex	

Building block		Where to find the Draft Determinations	
	Innovation	Chapter 10 of Core Document	Chapter 5
	BPI Reward/Penalty	Chapter 12 of Core Document	Chapter 1
	Cyber and Physical security	Chapter 7 of Core Document	Chapter 3
Adjustments to BR for company performance	Totex Incentive Mechanism (TIM)	Chapter 10 of Core Document	Chapter 1
	Network Asset Risk Metric (NARM)	Chapter 4 of Core Document Appendix 3 of NARM Annex	NARM Annex
	BPI Reward/Penalty	Chapter 10 of Core Document	Chapter 1
	Return Adjustment Mechanism (RAM)	Chapter 8 of Regulatory Finance Annex	
Rules to adjust BR for other factors	Uncertainty Mechanisms (including Pass-through)	Chapter 7 of Core Document	Chapter 4
	Policy Indexation (RPE, ongoing efficiency)	Chapter 5 of Core Document	
	Other Indexation (RAV, CoE, CoD)	Chapter 9 of Regulatory Finance Annex	
	Whole System Mechanisms	Chapter 7 and 8 of Core Document	
	Pensions	Chapter 11 of Regulatory Finance Annex	
	Directly Remunerated Services (DRS)	Chapter 11 of Regulatory Finance Annex	

An overview of SHET's RIIO-2 price control

1.5 A summary of our proposed position for SHET's baseline totex is presented in Table 2. This reflects our view of efficient costs that we propose will form SHET's baseline totex allowance for RIIO-ET2 price control period. We have set baseline totex allowances for SHET 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: SHET's baseline funding request and Ofgem's proposals

Cost area	SHET proposed allowance (£m)	Ofgem proposed allowance (£m)
Load related capex	839.8	717.3
Non-load related capex	824.2	540.5
Network operating costs	112.4	54.8
Non operational capex	207.8	90.2
Indirect opex	360.3	265.7
Other costs	43.9	38.1

Cost area	SHET proposed allowance (£m)	Ofgem proposed allowance (£m)
Efficiency challenge	-	(97.9)
Total	2388.4	1608.7

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 SHET (further details are in Chapter 2 of this document).

Table 3: Proposed common and bespoke outputs applicable to SHET

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 SHET		
ENS Compensation Scheme	CVP	Chapter 2
Biodiversity No Net Loss / Net Gain	CVP	Chapter 2
Reactive Power	PCD	Chapter 3
Response and recovery - substation resilience	PCD	Chapter 2
Resilience - Protection and control:	PCD	Chapter 2
Resilience - Physical security	PCD	Chapter 2
Shared Use Infrastructure	PCD	Chapter 3
Strategic Network Capability	PCD	Chapter 3

1.7 The cross-sector and ET sector 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 SHET (further detail is in Chapter 4 of this document).

Table 4: Proposed common and bespoke UMs applicable to SHET

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 SHET		
Subsea cable repair	Re-opener	Chapter 4

1.8 Table 5 sets out our NIA proposal for SHET (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 SHET

Consultation position
£8m, conditional on an improved industry-led reporting framework.

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

Table 6: Summary of proposed SHET BPI performance

BPI Stage	Proposed outcome	Further detail
1	Pass – No Minimum Requirement fail ratings.	Core Document for approach to assessment and rationale.
2	CVP reward is to be confirmed in relation to one CVP that we are proposing to accept. We intend to engage with SHET, NGET and NGGT to develop a robust common methodology for calculating the value.	Core Document for approach to assessment. Chapter 2 of this document for views on specific proposals.
3	Penalty of £47.3m	Core Document for approach to assessment. Chapter 3 of this document for specific views on SHET performance.
4	Reward of £0m	Core Document for approach to assessment. Chapter 3 of this document for specific views on SHET performance.
Cap calculation	Total penalty before cap: £47.3m Proposed SHET totex: £1608.7m Maximum BPI penalty (2% of totex): £32.17m SHET penalty reduced to £32.17m to reflect maximum BPI penalty.	Core Document sets out detail on application of 2% cap
Overall	**Penalty of £32.17m**	Core Document Chapter 10

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

Table 7: Proposed TIM rate for SHET

SHET TIM rate
30.9%

1.11 Table 8 below summarises the financing arrangements that we are proposing to apply to SHET. 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 SHET

Finance Parameter	SHET 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	1.47%	
Allowed return on capital	2.47%	

2. Setting outputs

Introduction

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

- Firstly, we set out the SHET-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 SHET proposed in its Business Plan and any bespoke outputs that we propose to apply to SHET.

Common outputs

2.2 The SHET-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: SHET 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 - 102MWh 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 will 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 are 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-F, ODI-R, PCD, LO	ODI-R for science-based targets for BCF reductions. Multiple EAP commitments in other impact areas, see ET Annex.

Output name	Output type	Parameters
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 the Core Document.

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

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

Bespoke Output Delivery Incentives

2.7 Table 10 below summarises the bespoke ODI proposals that SHET submitted as part of its Business Plan and outlines our consultation position.

Table 10: SHET's bespoke ODI proposals

Output name and description	Consultation position
Energy Not Supplied (ENS) Compensation Scheme: SHET proposed to continue the scheme for RIIO-2. The scheme provides payments to customers off supply for 6 hours and additional payments for customers off supply for 12+ hours.	**Accept:** We consider that it is appropriate to continue the scheme due to network design characteristics specific to Scotland and SHET's network.[2] SHET's network consists of self-derogated lines where the risk profile relating to ENS may differ from other TOs' networks.[3] SHET's proposal provides a proportionate and efficient approach to reimburse customers who face a higher risk of ENS due to the design of its network. We expect SHET to update its Compensation Methodology Statement, including updating monetary payments to customers in 2018/19 prices, and submit it to Ofgem by 31 December 2020 for approval before the start of RIIO-2. Please refer to our ET Annex for further detail on the ENS ODI-F generally.
International benchmarking: ITOMs (ODI-R): SHET proposed a reputational incentive in respect of the International Transmission Operations and Maintenance Study (ITOMS). SHET has set a target to achieve low cost/ high service (quartile 4) outcome by the end of the RIIO-T2 period.	**Accept:** We agree that companies should strive for continuous improvement and can learn from others through benchmarking performance. We would look for this to be done in an administrative-light manner and that any reporting should be open and transparent so that we can gauge whether meaningful progress is being made through this commitment.
International benchmarking: ITAMs (ODI-R): SHET proposed a reputational incentive in respect of being an upper quartile (ie top 25%) operator in the International Transmission Asset Management Study (ITAMS) by 2026.	**Accept:** We agree that companies should strive for continuous improvement and can learn from others through benchmarking performance. We would look for this to be done in an administrative-light manner and that any reporting should be open and transparent so that we can gauge whether meaningful progress is being made through this commitment.
RIIO-T2 System Outage Management Proposals to Reduce Constraint Costs: This was a joint proposal from the TOs and 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.

[2] In Scotland, the 132kV network is part of the transmission network and is less interconnected to Grid Supply Points, compared to higher voltage levels. As a result, the transmission network in Scotland has less "redundancy", meaning there is a higher risk that a planned network outage in Scotland could result in ENS. This would result in loss of supply to directly connected customers on the 132kV network and to end consumers on the distribution network.

[3] There are different features on all TO networks. For example, NGET's network differs from the Scottish TOs as they only have 275kV and 400kV lines (but a higher volume of circuits). Although NGET's network is meshed and has more redundancy, if there is a fault on these circuits, it may result in large load loss (as it covers bigger region). SHET's network also differs from SPT's network as SHET has more self-derogated and single circuit transmission lines. As a result, when SHET is planning an outage on such lines it ensures that alternative continuity of supply measures are in place (often in cooperation with the DNO).

Consultation questions

SHETQ1. Do you agree with our proposals on the bespoke ODIs? If not, please outline why.

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

Background

2.8 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.[4]
- 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.[5]
- 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

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

Rationale for consultation position

2.10 The TOs have identified barriers in the use of STCP 11.4, which they propose to resolve under this four-staged incentive proposal.[6] We encourage the TOs and the ESO to continue discussions on how to resolve the barriers that they have identified and to utilise the existing STC modification process, where appropriate,

[4] 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: National Grid system operator website: SO-TO code
[5] The TOs note that this information could be reported to the User groups and events such as the OC2 Forum.
[6] For example, the TOs note that the STCP processes are slow and burdensome.

in order to explore any possible changes to STCP 11.4 through the STCP panel process.[7]

2.11 We have not seen sufficient evidence to support the need for an ODI to encourage the use of STCP 11.4 at this time.[8] We note that this STCP was recently introduced and we do not consider 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.[9] These KPIs will enable us to better understand TO outage management and the use of tools such as STCPs over RIIO-2.

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

2.13 In addition, in our 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.[10]

Consultation questions

SHETQ2. Do you agree with our consultation position to reject the 'RIIO-T2 System Outage Management Proposals to Reduce Constraint Costs'?

Bespoke Price Control Deliverables

2.14 Table 11 below summarises the bespoke PCD proposals that SHET submitted as part of its Business Plan and outlines our consultation position.

Table 11: SHET's *bespoke* PCD proposals

[7] As set out in here: National Grid system operator website: SO-TO code
[8] We consider 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.
[9] Please see the ET Annex for further information on the NAP.
[10] SSMD Core Document, paragraph 10.54.

Output name and description	Consultation position
Resilience: Physical security: SHET proposed a number of substation security improvements by 31 March 2026.	**Accept:** We propose accepting this proposal and the associated baseline funding request. SHET will install CCTV and alarms at 35 substation and cable sealing end compounds where none exist and upgrade 20 obsolete systems. In addition, SHET will upgrade 23 substations with palisade and new safety signage. All works as specified by SHET shall be completed by 31 March 2026.
Shared Use Infrastructure: SHET proposed delivering 2047 MVA of shared use infrastructure capacity by 31 March 2026.	**Accept:** See Chapter 3 of this document.
Strategic Network Capability: SHET proposed increasing the boundary transfer capability of the B4 boundary by 1090MW by 31 March 2026	**Accept:** See Chapter 3 of this document. .
Resilience: Protection and control: SHET proposed upgrading 64 protection schemes and 33 RTUs by 31 March 2026.	**Accept:** We propose accepting this proposal and the associated the baseline funding request. SHET will upgrade 64 protection installations and 33 RTUs. All works shall be completed by 31 March 2026.
Response and recovery: substation resilience: SHET proposed increasing substation standby capability to 120 hours standalone operation and providing dual LV supplies by 31 March 2026.	**Accept:** We propose accepting this proposal and the associated baseline funding request. SHET will carry out works to meet 120 hours of autonomy at sites which do not meet the ENA ER G91 guidance of 72 hours. In total SHET will upgrade 116 substation sites. All works shall be completed by 31 March 2026.
Reactive Power: SHET proposed maintaining long term compliance with the SQSS and delivering + 325/-225 MVar of reactive power by March 2026.	**Accept:** See Chapter 3 of this document.
Waste sent to landfill: SHET proposed achieving zero non-compliance waste to landfill by the end of 2025/26.	**Accept:** Re-categorised as an EAP commitment. See ET Annex.
Construction waste: SHET proposed targeting 70% recycling, recovery and reuse of construction and demolition waste by 2025/26.	**Accept:** Re-categorised as an EAP commitment. See ET Annex.
Scope 1 and 2 GHG emissions: SHET proposed targeting a 33% reduction by 2025/26 compared to 2018/19 levels.	**Accept:** Re-categorised as an EAP commitment. See ET Annex.
Diversity and inclusion: SHET proposed providing inclusion and diversity training to its employees.	**Reject:** We welcome SHET's proposal. However, we do not consider there is any need for this to be an additional PCD and these activities are funded through baseline allowances.
Stakeholder Engagement Commitment: SHET proposed surveying its stakeholders, using KPIs to measure performance and the Accountability	**Reject:** We welcome SHET's proposal. However, we do not consider there is any need for this to be an additional PCD and these activities are funded through baseline allowances.

AA1000 Health Check as part of its engagement strategy.	
Reliability: Digitising the network: SHET proposed the installation of smart monitoring and establishing real time asset analytics at a dedicated control room facility.	**Reject:** We propose rejecting the baseline funding request for the new integrated condition monitoring equipment. Our rationale is detailed in Chapter 3 of this document.
Enhanced Reporting Framework: SHET proposed adopting a reporting framework, developed in conjunction with Citizens Advice, to increase transparency around company operations.	**Accept:** We welcome attempts to increase transparency in reporting so that consumers can be more aware of the role and responsibilities of transmission companies.
New CBA framework: SHET proposed using a new Cost Benefit Analysis (CBA) framework for the evaluation of new investments from 1 April 2021	**Reject:** We are encouraged that SHET is looking to expand the remit of the traditional CBA to take in to account other factors, but we are concerned that this may lead to a deviation of outcomes on project evaluation between Ofgem and SHET. We would be willing to evolve our current CBA framework if SHET is able to bring forward new ideas, so that the industry can progress in unison.
Faults: SHET proposed a bespoke PCD which aims to reduce the number of unplanned interruptions of all durations with no exclusions. No baseline funding has been proposed for this PCD.	**Reject:** We welcome SHET's proposal. However, we do not consider there is any need for this to be an additional PCD. We consider network performance is adequately funded and incentivised via existing mechanisms ie Energy Not Supplied.
Redundancy: Back up assets: SHET proposed inventory management systems to be of industry best practice commensurate with larger network size and range of technologies. The proposed output was two specialist warehousing facilities.	**Reject**: We propose to reject the baseline funding and PCD request for the new warehouse facilities. Our rationale is detailed in Chapter 3 of this document.

Consultation questions

SHETQ3. Do you agree with our proposals on the bespoke PCDs? If not, please outline why.

Consumer Value Propositions

2.15 The table below summarises the CVP proposals that SHET 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.

2.16 For further information on the proposed CVPs, please see SHET's published Business Plan.[11] In the table below, outputs and benefits are as described in SHET's published Business Plan.

Table 12: SHET's CVP proposals

CVP name and description	Consultation position
CVPs we propose to accept	
Biodiversity No Net Loss / Net Gain: Achieve overall 'No Net Loss' on new infrastructure projects gaining consent in 2020 onwards and achieve 'Net Gain' on projects gaining consent in 2025 onwards, improving biodiversity and natural capital of land, delivering £158.6m benefit.	**Accept:** We consider that SHET's proposal goes beyond Business as Usual (BAU) and provides demonstrable consumer benefit – Please see further information under the heading 'Biodiversity No Net Loss / Net Gain'.
CVPs we propose to reject	
Energy Not Supplied (ENS) Compensation Scheme: Proposal to continue this scheme, providing payments to customers who are off supply for more than six hours. The benefit of this proposal was not quantified in monetary terms.	**Reject:** We recognise the ENS Compensation Scheme's benefits to consumers, however the proposed activity is a continuation of RIIO-1 activities. It is not clear how these activities provide additional value to existing and future vulnerable consumers above BAU during RIIO-2.
Connecting for society - local and community energy policy: Facilitating local and community energy by being an expert and trusted partner for local authorities and other local stakeholders as they develop Local Area Energy Plans (LAEP) and Local Heat and Energy Efficiency Strategies (LHEES) and addressing barriers local communities face, delivering £6.6m benefit.	**Reject:** It is not clear what 'being an expert and trusted partner' entails and no detailed initiatives or activities were outlined. LAEPs are a government initiative with mandated targets for meeting locally-owned energy and similar engagement has been undertaken as BAU in RIIO-1.
Connecting for society - commercial and connections service: Initiatives that deliver quality connections services, facilitating an accelerated pathway to net zero delivering societal value over and above the value proposed in the existing framework of outputs, leading to carbon savings, delivering £59.5m of benefits.	**Reject:** While we acknowledge that these policy initiatives have been developed in response to stakeholder feedback over RIIO-ET1, we are concerned with the methodology for monetising this CVP and the proposals for reporting on its delivery. In RIIO-ET1 SHET has demonstrated that it is already capable of accelerating connections at a negligible cost. We also have concerns that the proposed measure of delivery of this CVP may be affected by contingency built in the original target. Finally, we consider Quality of Connections survey already helps to drive relevant behaviour.
Supporting local communities - Supporting	**Reject:** We recognise the proposal to

[11] SHET – Business Plan Annex, Consumer Value Propositions, Regulatory Framework - Outputs, Incentives CVP & Innovation

CVP name and description	Consultation position
vulnerable customers: Additional support to vulnerable consumers in the North of Scotland complementing and supplementing the role of the DNO. The benefit of this proposal was not quantified in monetary terms.	provide additional support to vulnerable consumers has merit. However, most of the proposed activities, such as training and clear communication, do not demonstrably go beyond BAU.
Promoting the natural environment - Visual amenity: Developing well-justified initiatives in Sustainability Action Plan to improve the natural environment and visual amenity impacts, delivering £30.7m of benefits.	**Reject:** It is not demonstrated why these activities go beyond BAU, particularly the proposed stakeholder engagement activities. Existing licence condition requires stakeholder engagement/input to identify and prioritise mitigation projects.[12] We do not consider the assumptions and WTP studies to be sufficient to justify reward for BAU activity. There is insufficient evidence of stakeholder support for allowing additional reward.
Connecting for society - Above BAU in whole system network: Network Access Policy: Going above and beyond the requirements of the NAP, building on track record in RIIO-T1, delivering £5m of benefits over RIIO-T2.	**Reject:** Having a Network Access Policy in place is already a licence obligation. TOs are obligated to ensure outages are efficiently coordinated to minimise whole system costs and efficiently coordinate between networks. We welcome the proposal to inform customers of outages earlier. However the method used to quantify the benefit is based on assumptions that are difficult to verify. We consider the outages ODI-F is sufficient reward to drive performance in this area. We also did not identify clear stakeholder support.
Tackling climate change - Science Based Target: Reducing the controllable greenhouse gas emissions from operations by 33% by 2026, compared to 2018/19 levels, consistent with net zero emissions pathway. The benefit of this proposal was not quantified in monetary terms.	**Reject:** We welcome SHET's proposed Science Based Target (SBT) and the actions it is taking to achieve it. However, we set out in our SSMD that having an SBT is a minimum requirement for RIIO-2 and we expect initiatives in companies' EAPs to reduce BCF to be BAU and funded as such. We do not consider this presents additional value to existing and future vulnerable consumers.
Reducing risk of consumer overpaying - Volume driver unit cost allowance: Using actual historical costs in setting unit cost allowances (UCAs) rather than forecasts for the volume driver, reducing the risk of outperforming the UCA due to any factors other than efficiencies, delivering £8.5m of benefits in RIIO-T2.	**Reject:** We consider the use of robust, symmetrical volume driver mechanisms such as that proposed in this CVP benefits TOs as well as consumers by reducing cost uncertainty, and it was not demonstrated why this warrants an additional reward.

[12] Special Condition 6G (Mitigating the impact of pre-existing transmission infrastructure on the visual amenity of designated areas).

CVP name and description	Consultation position
Reducing risk of consumer overpaying - Certain View and output return commitment: Taking a Certain View approach to investment and committing to return unspent infrastructure and non-infrastructure allowances, it is more likely than in the past that any outperformance of the RIIO-T2 price control will only be due to actions taken to make efficiency savings and not due to other factors, delivering £75m of benefits in RIIO-T2.	**Reject:** We consider the use of robust, symmetrical volume driver mechanisms, including this activity, reduces the risks for both consumers and TOs without the need for further CVP reward.
Supporting local communities - Local supply chains: Developing well-justified initiatives to support local supply chains in Sustainability Action Plan to optimise the benefits to the local communities in which it is operating, delivering £6.4m of benefits in RIIO-T2.	**Reject:** We consider that supply chain management is BAU, and this activity falls within corporate social responsibility.
Early and regional specific engagement: Setting a target for the RIIO-T2 period of holding at least five regional and community engagement events on strategic network development each year. The benefit of this proposal was not quantified in monetary terms.	**Reject:** We do not consider this proposal goes beyond BAU. We consider it is important that SHET engages with stakeholders in the manner outlined in this proposal as a matter of course.

Consultation questions

SHETQ4. Do you agree with our proposals on the CVPs? If not, please outline why.

Accept: Biodiversity No Net Loss / Net Gain

Biodiversity No Net Loss / Net Gain	
Purpose	Improve the biodiversity and natural capital of SHET's land by achieving biodiversity No Net Loss (NNL) on construction projects from 2020, and Biodiversity Net Gain (BNG) on construction projects from 2025. [13]
Benefits	Improved environmental amenity

Background

2.17 Our SSMD highlighted biodiversity as an area for companies to focus on when considering the environmental impact of their operations.[14]

[13] Forest trend organisation website: no net loss and net gain of biodiversity
[14] SSMD Core Document, paragraph 7.3.

2.18 SHET proposed a CVP for £158.6m to improve the biodiversity and natural capital of land used for infrastructure projects during RIIO-2. SHET has committed to achieving NNL on infrastructure projects gaining consent from 2020 and BNG on projects gaining consent in 2025 onward. This would result in SHET improving the biodiversity at around 24 sites during RIIO-2.

Consultation position

Output parameter	Consultation position
Deliverable	Achieve NNL on construction projects from 2020. Achieve BNG on projects in 2025 and 2026.
CVP value (£m)	TBC - rationale below
CVP reward (£m)	Revised CVP Value * 0.2893[15]
Proposed approach to allowance clawback	Pro-rata return of reward for proportion of sites that did not achieve BNG target.

Rationale for consultation position

2.19 We propose to accept SHET's CVP relating to NNL on construction projects after 2020 and BNG on projects after 2025. The CVP provides consumer value because of the improved environmental amenity it would create.

2.20 We consider that SHET's BNG proposal goes beyond BAU as there is no obligation for them to achieve BNG on its construction projects and SHET has provided evidence of stakeholder support for its approach.

2.21 However, we have concerns about the methodology used by SHET to calculate consumer benefit and the resulting CVP amount.

2.22 The willingness-to-pay study used by SHET to quantify the benefit is abstract and no evidence has been provided to suggest consumers would be willing to pay £158.6m for the scope of work being proposed by SHET. Other companies have quantified consumer value for similar activities for a significantly lower value than SHET's proposed CVP amount.

2.23 We intend to engage with the TOs ahead of Final Determinations to develop a robust common methodology for calculating the value that consumers place on biodiversity and natural capital ahead of RIIO-2 Final Determinations.

[15] SHET TIM rate.

Consultation questions

SHETQ5. Do you agree with our proposal to approve the Biodiversity No Net Loss / Net Gain CVP and do you agree with our proposal to re-quantify the value of it?

3. Setting Baseline Allowances

Introduction

3.1 This chapter sets out our proposed allowances against the different cost areas within SHET's Business Plan. We have set baseline totex allowances for SHET 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 proposals on what elements of the plan should be accepted as the basis for setting the RIIO-ET2 baseline allowance, what elements should be rejected as not being in consumers' interests and any modifications we are proposing 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.

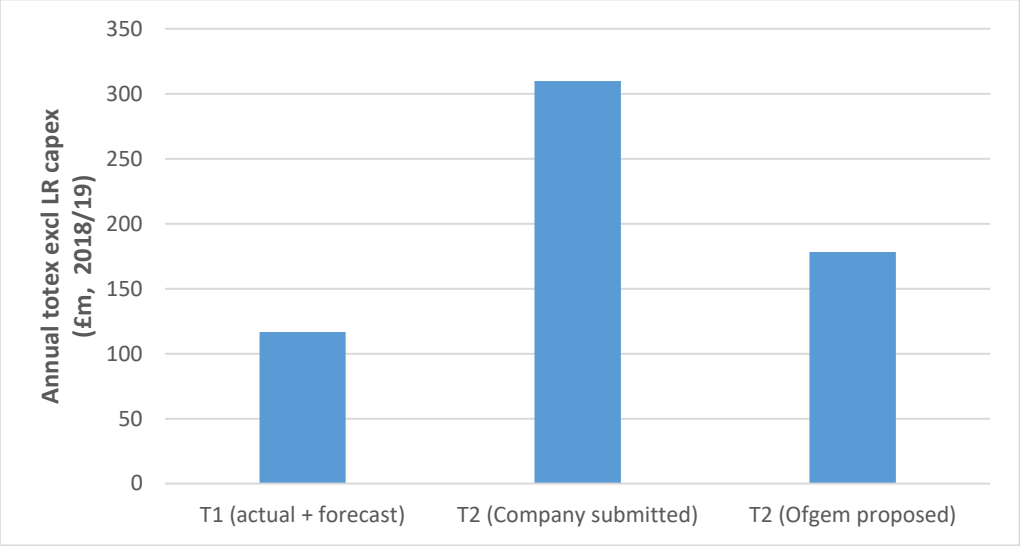
3.2 Table 13 below sets out our proposed RIIO-2 totex allowances for SHET, grouped by the main cost categories within the Business Plan Data Template (BPDT).

Table 13: Proposed SHET allowance for RIIO-2 period

Cost Category	SHET proposed baseline (£m)	Work/volume reductions (£m)	Cost reductions (£m)	Ofgem proposed baseline (£m)
Load related expenditure	839.8	79.9	42.6	717.3
Non-load related expenditure	824.2	182.5	101.2	540.5
Non-operational capex	112.4	52.5	5.1	54.8
Network operating costs	207.8	72.4	45.2	90.2
Indirect opex	360.3	93.9	0.7	265.7
Other costs	43.9	5.8	-	38.1
Efficiency challenge	-			-98.0
Total	**2388.4**			**1608.7**

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.[16]

Figure 2: SHET Annualised totex in RIIO-ET1 and RIIO-ET2



3.4 Of our proposed total baseline totex allowance, we assess £647m to be of high confidence and £818m 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 totex incentive mechanism at 30.9%. The total proposed penalty due to the BPI stage 3 incentive is £47.3m. Our consultation position is that there are no BPI stage 4 rewards for SHET.

3.5 In support of the overall Business Plan submission and proposed baseline allowance, SHET produced an engineering submission to detail and justify the proposed expenditure. Where schemes are listed in the main Business Plan submission, SHET have produced an Engineering Justification Paper (EJP) supported by Cost Benefit Analysis (CBA) and Asset Condition Reports to explain and justify the proposed expenditure. This combined submission is consistent with

[16] 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.

our guidance and navigable such that SHET's Business Plan outputs are traceable to specific EJPs and BPDT items.

3.6 The following sections set out Ofgem's proposed allowances and the rationale for any differences from the allowances requested by SHET in its submissions. These are dealt with in the order of their presentation in Table 13.

Capital expenditure (Capex)

3.7 We have reviewed the submitted capital expenditure program along the main cost categories of load related expenditure, non-load related expenditure and non-operational capex. We specify below the expected outputs for a given approved baseline scheme or activity. If these outputs are not delivered, then Ofgem can claw back allowance for the degree of non-delivery.

Load related capex

3.8 SHET's baseline plan for load related expenditure (LRE) comprises a range of local enabling work, and work associated with strategic or shared infrastructure. SHET total LRE request is £891m (including indirect opex)[17] of which £310m is associated with local enabling work and £581m is associated with strategic infrastructure. The total request includes £129m of pre-construction costs. The proposed outputs associated with this expenditure are detailed in the "Building a Network for Net Zero" section of the SHET Business Plan.

3.9 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. Where SHET has combined LRE with non load related expenditure (NLRE), the rationale is clear and assumptions are reasonable.

[17] SHET's capex plan is assessed against SHET's proposed project costs in the BPDT. SHET's proposed total load related capex costs of £891m is calculated by summing the RIIO-2 portion of the project costs in the BPDT. These costs also include Indirect Opex costs, which are assessed separately as part of Opex assessment. In the table titled 'SHET's baseline LRE request', an estimated amount (£51m) has been removed from SHET's total load related capex proposed allowance to account for the RIIO-2 portion of Indirect Opex which are embedded in the project total costs, giving a total proposed capex cost of £840m.

3.10 SHET proposed three PCDs associated with the LRE, with the following expected outcomes in the RIIO-ET2 period;

- (i) Shared Use Infrastructure: SHET proposed to deliver 2047 MVA of shared use infrastructure capacity by 31 March 2026.
- (ii) Strategic Network Capability: SHET proposed to increase the boundary transfer capability of the B4 boundary by 1090MW by March 2026.
- (iii) Reactive Power: SHET proposed to maintain long term compliance with the SQSS and deliver + 325/-225 MVar of reactive power by March 2024.

3.11 SHET's proposed use of PCDs associated with defined outputs gives further confidence that consumers are protected, should the need for these projects not materialise in the RIIO-T2 period. A summary table of SHET's LRE request is shown below.

Table 14: SHET's baseline LRE request

Scheme Type	2022 (£m)	2023 (£m)	2024 (£m)	2025 (£m)	2026 (£m)	Total RIIO-2 (£m)
Local Enabling (Entry)	121.7	111.7	61.4	-4.7	3.7	293.8
Local Enabling (Exit)	0.0	0.0	0.0	0.0	0.0	0.0
Wider Works	108.7	146.7	100.8	115.6	108.7	580.6
LRE (Exit - Sole Use)	0.0	0.0	0.0	0.0	0.0	0.0
LRE (Entry - Sole Use)	13.5	3.1	0.0	0.0	0.0	16.6
TSS Infrastructure	0.0	0.0	0.0	0.0	0.0	0.0
Total						**891.0**
Total less indirect opex						**839.8**

3.12 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 LRE (Entry sole use)

3.13 SHET's local infrastructure program comprises seven generation projects which commenced construction within RIIO-T1 but are currently forecast to incur expenditure in RIIO-T2 and deliver outputs (crossover schemes). The current

RIIO-T1 licence allows the recovery of costs for schemes in-flight and that are expected to deliver in the first two years of RIIO-T2.

3.14 SHET's baseline plan also contains transmission works on its network to accommodate two offshore generation connection projects and an additional onshore connection scheme. These projects are not subject to the current RIIO-T1 licence mechanism.

3.15 The projects and the estimated cost of works driven by the connecting party in the RIIO-T2 period, as specified by SHET, are set out in Table 15 below.

3.16 No generation connection projects have been removed from the proposed baseline plan as a result of our assessment.

Table 15: Projects associated with the delivery of RIIO-ET2 generation connections

Site	Output	Scope and connection date	Requested allowance (all T2 years)
Carradale GSP reinforcement	39.1MW	Increased capacity at Grid Supply Point (Carradale substation) for the connection of new distributed generation. 31st October 2023	£4.65m
Creag Riabhach	79.2MW	Construction of a new grid entry point for Creag Riabhach windfarm, including the establishment of a new 132kV windfarm feeder circuit breaker bay at the new Dalchork 132kV substation. 30th April 2022	£14.22m
Limekilns	90MW	Connection of a wind farm via a single transformer 132/33kV substation supplied through a 5.5km 132kV overhead line, coupled with 0.75km of new underground cable. 31st October 2021	£6.81m
Millennium South	25MW	Connection of a wind farm via a new single transformer 132/33kV substation. A new 132/33kV 45 MVA single transformer will be installed, along with a single 33kV transformer circuit breaker. 30th October 2021	£3.05m
Glen Kyllachy	48.5MW	Construction of a new grid entry point for a windfarm, including the installation of a new 132kV metering circuit breaker and	£0.66m

Site	Output	Scope and connection date	Requested allowance (all T2 years)
		associated disconnectors coupled to approximately 3.5km of 132kV sole use connection circuit. The new 132kV circuit will comprise of 2.5km of 132kV wood pole overhead line with 1 km of 132kV underground cable. 30th April 2021	
Abernethy	58.91MW	Increased capacity at Grid Supply Point for the connection of new distributed generation and the expansion of local transmission system capacity by the establishment of a 132kV Mesh Corner at Abernethy substation. 30th October 2022	£16.50m
Lairg to Loch Buidhe	607MVA	Reinforcement of the existing 132kV network in the area, including new overhead line and substation to increase the local transmission system capacity to accommodate new generation connections. 30th April 2022	£31.64m
Glenshero	168MW	Transmission works at the Melgarve substation to accommodate the connection of Glenshero Wind Farm. 31st March 2024	£4.11m
Firth of Forth	1075MW	Development of the Tealing substation to accommodate the connection of Firth of Forth Offshore Windfarm. 31st October 2022	£19.15m
Moray West	800MW	Extension of the Blackhillock substation to accommodate the connection of Moray East Offshore Windfarm which has a capacity of 800MW. 31st March 2024	£8.01m

3.17 SHET's baseline plan contains a proposal to establish a new reactive compensation substation at Kinardochy.[18] SHET's baseline plan allocates this project to Local Enabling (Entry) investment category. However, the reinforcement is driven by a

[18] Although the scheme does not have a proceed signal under the latest NOA recommendation, SHET have support from the ESO that the scheme should be progressed based on additional wider system benefits (to maintain compliance for voltage step change in the NETS SQSS).

combination of drivers: the requirement to facilitate future renewable generator connections on SHET's network and by the need to maintain NETS SQSS compliance for wider system power flows. The funding request associated with this project, as specified by SHET, is set out below.

Table 16: Delivery of the Kinardochy project

Site	Output	Scope and delivery date	Requested allowance (all T2 years)
Kinardochy reactive compensation	Primary deliverable: Static compensator (STATCOM) with a range of +/-225MVAr, and a 100MVAr mechanically switched capacitor with damping network (MSCDN).	Establish a new 400kV GIS substation on the Beauly – Denny 275kV circuit (Kinardochy substation). Install reactive compensation at the new Kinardochy substation comprising of a STATCOM and MSCDN. 31st March 2024	£92.63m

3.18 We consider that SHET has made a strong case that investment in reactive compensation at Kinardochy is needed, but there is some uncertainty around exactly when the project will be required, and therefore a question around whether it should receive baseline funding or be considered under the LOTI re-opener.

3.19 We expect that a Final Needs Case submission under LOTI in late 2021 should allow for the project to accommodate the projected wider system growth towards the end of the RIIO-T2 period. The LOTI process will allow for our assessment to consider an updated view of what generation has been connected in RIIO-ET1, an updated assessment of the progress of local generation projects. It may also allow for greater clarity on the status of the NorthConnect interconnector, which interacts with the proposed investment.

3.20 We recognise however, that if a specific connection (Glenshero Wind) progresses to completion before 2024, the LOTI process is unlikely to allow the required investment to be delivered on time, meaning there would be a strong case for providing baseline funding for this project.

3.21 We have included the Kinardochy project in our baseline case for these Draft Determinations. We invite SHET, in response to this consultation, to demonstrate

that either Glenshero Wind will connect before 2024, or that a LOTI Final Needs Case in 2021 will put at risk the meeting of the wider system need. If neither of these is forthcoming by the time of our Final Determinations, we may withdraw this from our Final Determinations baseline.

Wider works

3.22 SHET's Business Plan submission in this cost category included three specific boundary reinforcement projects and pre-construction works.

3.23 Each of the three projects have been indicated by the ESO as needing to proceed, along with the date in which delivery will provide the best economic value to consumers. The proposed projects are briefly summarised below.

- East Coast Onshore 275kV Upgrade: reprofiling works on the existing 275kV circuits that cross the B2/B4 boundary to run at a higher temperature.
- North East 400kV Upgrade: reinforcement is required to accommodate local connections, namely, the 800MW Moray West Offshore Windfarm, Clashindarroch 77MW windfarm and the NorthConnect 1400MW interconnector between Peterhead and Norway.
- East Coast Onshore 400kV Incremental Reinforcement: upgrading the 275kV infrastructure on the east coast for 400kV operation to increase the north to south power transfer capability of SHET's network.

3.24 The total cost for these projects is estimated by SHET at £636m, of which £560m is expected to be incurred within the RIIO-T2 period. The output measures of the works include the delivery of 1.09GW of additional boundary transfer capability across boundary B4 (east coast projects) and an additional 1440MVA of infrastructure capacity (north east project).

3.25 We propose that the first two of these projects should be included in the baseline for RIIO-ET2 as they both anticipate delivering outputs within the RIIO-T2 period. The scope of each project is summarised in Table 17 below, along with the total requested RIIO-T2 allowance.

Table 17: NOA recommended projects

Project	Output	Scope and expected delivery date	Requested allowance (all T2 years)
East Coast 275kV Upgrade	Primary deliverable: B4 Boundary Capability Uplift of 610MW Secondary deliverable: Scope of works presented in the relevant EJP	Reprofiling of the existing eastern circuits between Kintore and Kincardine, and Tealing and Glenrothes/Westfield to incrementally increase the boundary capability over B4 ahead of an upgrade to 400kV operation. Power flow control devices at Tealing will be used to balance flows on the system and alleviate limitations observed for north to south power transfer. 31st March 2023.	£155.08m
North East 400kV reinforcement	Primary deliverable: 1440MVA Secondary deliverable: Scope of works presented in the relevant EJP	North East 400kV reinforcement will deliver an output of 720MVA per circuit based on the increase in overhead line Summer Pre-fault Rating. Of the 720MVA, 350MVA is attributed to the voltage uprating from 275kV to 400kV (operating at 65°C), the remaining 370MVA uplift is attributed to the replacement of the phase conductors operating at 90°C. 31st September 2023.	£190.61m

3.26 The third capex project, East Coast 400kV Incremental Upgrade, will progress works to deliver an additional 480MW of transfer capability across the B4 boundary. The output is currently expected to be delivered in RIIO-ET3.

3.27 SHET estimates the total cost of the East Coast 400kV project to be £257m, which includes £36m of cost expected to be incurred in RIIO-ET3 timescales to deliver the boundary transfer capability increase.

3.28 We agree that an element of ex ante funding is required in order to enable efficient procurement and to incentivise efficient timing of delivery of the East Coast 400kV project in RIIO-ET3.

3.29 In terms of its proposed pre-construction works, SHET indicated that it will only undertake pre-construction for schemes that have a NOA proceed signal, where they have strong evidence that they will be considered in future NOA iterations

during RIIO-T2, or where there are wider generation drivers for large shared use infrastructure. SHET proposed that a baseline allowance for these activities is set based on estimated total costs, with a mechanism in place to reconcile efficiently incurred costs at the end of the price control period and an adjustment mechanism to hand back any unused allowances.

3.30 SHET proposed a baseline allowance for pre-construction works that is calculated at 2.56% of the total estimated project cost, as set out in the pre-construction methodology annex of the SHET Business Plan.

3.31 However, based on the lack of supporting evidence, we consider that five of the pre-construction LRE projects with outputs in the RIIO-T3 period have weak needs cases due to uncertainty regarding the need for the projects. On this basis, we propose to exclude the following projects from the pre-construction baseline funding allowance: East Coast 400kV Phase 2 Reinforcement; 2nd Eastern HVDC Link from SSET to England; Beauly to Denny 400kV (Uprating the 275kV cct for 400kV Operation); 2nd HVDC Link to SSET Shetland from Rothienorman; and Skye/Western Isles Upgrade. We are proposing to exclude these from SHET's baseline LRE. This would represent a reduction of £88.7m gross compared to SHET's Business Plan submission. We have set out our proposed approach to managing uncertainty in relation to pre-construction funding in the ET Annex.

Cost efficiency assessment

3.32 We conducted our own analysis to arrive at our view of efficient unit costs to the projects that have had their needs case accepted. This has resulted in a proposed unit cost efficiency reduction of £11m across the LRE projects.

3.33 In reviewing our modelled cost outputs, we identified a systemic difference between SHET's proposed costs for a specific asset type and our view of efficient unit costs for that asset. Following discussion with SHET, we accepted its rationale for the use of a higher unit cost in our modelling. This change has been accounted for in our proposals below.

3.34 A further area where we propose a cost reduction across SHET's submission is project risk and contingency costs. SHET included a blanket 8.2% uplift across its entire LRE and NLRE programme of work to cater for unforeseen risks. This proposed level was based on a review of historical project delivery by SHET. However, as set out in the ET Annex, because the asset costs element of our view

of efficient costs is based on outturn costs, we consider that it already accommodates any associated risk and contingency. Accordingly, we propose not to accept this 8.2% uplift for asset costs within the LRE and NLRE proposals. Furthermore, we propose to remove any risk elements for schemes where the phasing of key risks are outside the RIIO-T2 period. These proposals result in a reduction of £31m compared to SHET's LRE submission.

3.35 Following our review of the efficient costs for projects that we are proposing to approve, we propose to reduce SHET's LRE submission by £42m. Including the approximately £80m costs relating to rejected schemes less any indirect opex costs, we have removed £122m from SHET's proposed costs and allowed £717m as part of the baseline allowance.

Projects spanning price control periods

3.36 We set out in the ET Annex our proposed approach for projects spanning price control periods. SHET's baseline plan contains nine generation connection projects and three wider works projects spanning RIIO-ET1 and RIIO-ET2, and one wider works project spanning RIIO-ET2 and RIIO-ET3.

3.37 For seven of the nine generation connection projects spanning RIIO-ET1/2, the current RIIO-ET1 licence contains a mechanism to derive the allowances for the whole span of these projects. For the other RIIO-ET1/2 spanning projects, our view of their efficient costs is derived from RIIO-ET2 cost assessment.

3.38 We then divided the total project efficient cost for these projects to the following two parts according to the SHET's submitted profile. Our proposed funding approach is:

- First part up to and including 31 March 2021 of £72.4m will be funded in RIIO-ET1 subject to true-up; and
- Second part from 1 April 2021 to 31 March 2026 of £101.9 will be part of RIIO-ET2 baseline allowances with relevant PCDs.

3.39 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 £197.5m, subject to true-up at the end of RIIO-ET2.

Proposal on LRE capex allowances

3.40 Our proposed allowances for SHET's RIIO-ET2 LRE plan are set out in the table below.

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

Scheme Type	2022 (£m)	2023 (£m)	2024 (£m)	2025 (£m)	2026 (£m)	Total RIIO-2 (£m)
Local Enabling (Entry)	108.2	96.4	51.2	-5.4	2.2	252.6
Local Enabling (Exit)	0.0	0.0	0.0	0.0	0.0	0.0
Wider Works	83.1	117.7	75.9	89.7	83.2	449.5
LRE (Exit - Sole Use)	0.0	0.0	0.0	0.0	0.0	0.0
LRE (Entry - Sole Use)	12.6	2.6	0.0	0.0	0.0	15.2
TSS Infrastructure	0.0	0.0	0.0	0.0	0.0	0.0
Total	203.9	216.8	127.0	84.3	85.4	717.3

High and Lower Confidence proportion in baseline totex allowance

3.41 Applying the methodology as set out in the Core Document, we assess that in our proposed baseline allowance for load related capex, £163m is high confidence and £356m is lower confidence.

BPI stages 3 and 4

3.42 As stated in the Core Document, we used the information submitted by SHET 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 has a high confidence in the justification of the proposed solution, have been classed as high confidence.

3.43 SHET provided what we consider is suitable independent cost information for 275kV Phase Shifting Transformers associated with scheme SHT2008 East Coast

275kV Upgrade, and all FACTS[19] equipment associated with schemes SHT2006 East Coast 275kV Upgrade and SHT20011 Kinardochy Reactive Compensation. For these assets, we propose to allow SHET the allowance that matches what it has proposed, and these costs have been classified as high confidence costs.

3.44 Where Ofgem does not have independent unit costs for given assets, and where we consider that SHET did not provide suitable independent cost information, these costs have been marked as lower confidence. Non-unit costs such as those relating to civil works, risk and contingency, pre-construction, and 'other' cost categories within the BPDT are also classed as lower confidence as we cannot independently set an efficient cost for these and there are significant uncertainties associated with these cost components. SHET did not provide sufficient independent cost information to support a high confidence classification for any of these costs. This has resulted in the classification of £460m of SHET's LRE submission as lower confidence.

3.45 Of these lower confidence costs, we propose to disallow £104m as unjustified or inefficient costs that should not have been submitted. Accordingly, our consultation position is that these attract a £10.4m disallowance penalty under the BPI stage 3 mechanism. We also propose that there are no stage 4 rewards under this cost category.

3.46 SHET's LRE programme comprises of three schemes with an output delivery year in RIIO-3. These are SHT2009, SHT20010 and SHT20032, all relating to the 'East Coast 400kV Incremental Upgrade' project. As stated in the ET Annex, 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. SHET proposed £215m for these schemes, of which we consider £197.5m to be an efficient allowance.

3.47 The schemes relating to the East Coast 400kV Incremental Upgrade project (SHT2009, SHT20010 and SHT20032) have an output delivery year in RIIO-3. Funding associated with these schemes will be subject to the cross period funding approach described in the ET Annex and therefore these schemes will not be

[19] As defined in the RIIO-T2 regulatory instructions and guidance: Glossary.

subject to the BPI and TIM mechanisms. There are no other projects in SHET LRE with an output delivery year outside RIIO-2.

LRE proposed allowances and PCDs

3.48 The PCDs associated with the allowed projects and their efficient costs allowances are shown in Table 19 below.

Table 19: LRE PCD summary

Site	Output	Total proposed allowance (all T2 years)
Carradale GSP reinforcement	39.1MW	£4.65m
Creag Riabhach	79.2MW	£14.22m
Limekilns	90MW	£6.81m
Millennium South	25MW	£3.05m
Glen Kyllachy	48.5MW	£0.66m
Abernethy	58.91MW	£16.50m
Lairg to Loch Buidhe	607MVA	£31.64m
Kinardochy Reactive compensation	+/-325MVAr	£84.55m
East Coast 275kV Upgrade	B4 Boundary Capability Uplift of 610MW	£142.51m
North East 400kV reinforcement	1440MVA	£163.20m
Blackhillock substation (Moray West Offshore Windfarm)	800MW	£5.41m
Tealing substation (Firth of Forth Offshore Windfarm)	1075MW	£15.57m
Glenshero Windfarm	168MW	£3.37m

Non-load related capex

3.49 SHET NLRE capex proposal is based on the execution of 29 asset replacement and refurbishment projects to be delivered in the RIIO-T2 period as well as a pre-construction allowance for future projects to be delivered in RIIO-T3. SHET's total NLRE request is £873m (including indirect opex[20]). Of which, £797m is for asset replacement and refurbishment, £13m is for RIIO-T3 pre-construction funding,

[20] SHET's capex plan is assessed against SHET's proposed project costs in the BPDT. SHET's proposed non-load related capex costs of £873m is made by summing the RIIO-2 portion of the project costs in the BPDT. These costs also included indirect opex costs, which are assessed separately as part of Opex assessment. In the table titled ' SHET's NLRE request', an estimated amount (£49m) has been removed from SHET's total non-load related capex proposed allowance to account for the RIIO-2 portion of Indirect Opex costs embedded in the project total costs, giving a total proposed capex cost of £824m.

£12m is for funding spares and £51m is for Black Start projects. The proposed list of interventions is described in the "Maintaining and Investing in the Existing Network" section of the SHET Business Plan and is detailed below. SPT's NLRE request is summarised in Table 20 below.

Table 20: SHET's NLRE request

Scheme Type	2022 (£m)	2023 (£m)	2024 (£m)	2025 (£m)	2026 (£m)	Total (£m)
Replacement	91.8	160.0	183.9	244.1	116.8	796.7
Refurbishment - Major	0.0	0.0	0.0	0.0	0.0	0.0
Refurbishment - Minor	0.0	0.5	0.0	0.0	0.0	0.5
Decommissioning	0.0	0.0	0.0	0.0	0.0	0.0
Spares	5.5	1.5	1.8	1.5	1.5	11.8
Black Start	6.6	12.8	12.8	12.8	6.1	51.1
Losses	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	4.3	4.3	4.3	13.0
Total	**103.9**	**174.8**	**202.8**	**262.7**	**128.8**	**873.1**
Total less Indirect Opex						**824.2**

3.50 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

3.51 We are not proposing any work volume adjustments for 18 of the 28 NLRE Asset Replacement projects, which have a submission value of £607.6m. We consider that the projects are well-justified by asset condition reports, degradation projections and engineering narratives.

3.52 We consider that 10 of the 28 NLRE Asset Replacement schemes that we consider to have weak needs cases, lack supporting evidence, or where the optioneering process is, in our view, deficient. The total submission value of the 10 schemes we consider not to be well justified is £189.7m gross. The following sections provide further detail on each of these schemes.

Defined schemes work

3.53 SHET proposed a portfolio of 'Hydro connections' under which, during the RIIO-T2 period, it would replace equipment in the connection substations for 10 hydro-electric power stations. It states that at some sites, associated equipment would be replaced in advance of end-of-life on the basis that this approach is of lower overall cost than undertaking two separate interventions ie refurbishment and then later, replacement.

3.54 SHET also propose to replace significant volumes of equipment ahead of need, but its proposals do not demonstrate clearly that this intervention must be completed in T2. It is our view that, in a number of cases, the asset condition reports do not support the replacement of the high value assets, specifically the site transformers. Where asset condition reports indicate that the transformers do not need to be replaced, we consider that a whole site replacement is not justified; rather, limited refurbishment and additional monitoring should have been considered as more appropriate activities.

3.55 For six of these proposed hydro schemes (Sloy, Culligran, Deanie, Tummel Bridge, Kilmorack Aigas and Quoich Tee), we consider that the evidence supporting the needs case is insufficient or contradictory, and has shortfalls in optioneering due to the dismissal of what we consider were valid options (ie limited refurbishments or enhanced monitoring). Accordingly, we propose to reject these schemes. The reasons for these are set out in the table below. It follows that we are proposing to exclude these from SHET's baseline NLRE. This would represent a reduction of £130.5m compared to SHET's submission.

Table 21: Rationale for proposed rejection of SHET's defined scheme works

Project	Rationale for proposed rejection of SHET's proposal
Sloy Substation Works: This is a substation asset replacement project. SHET proposed the replacement of transformers (GT), circuit breakers, switchgear and associated equipment. The total cost of the works proposed is £45.3m.	We consider that the asset condition report does not provide sufficient evidence for the need to replace GT1, GT2, GT3 and GT4. Based on the evidence provided within the asset condition report, we consider it is possible to extend the life of these transformers into the RIIO-ET3 period, with additional condition monitoring. Given the relative health of the GTs we are of the view that the chosen solution is not proportionate to the needs case.
Culligran Substation Works: This is a substation asset replacement project. SHET proposed the replacement of	We consider that the asset condition report indicates that the transformer, disconnectors and earth switches do not warrant replacement during the RIIO-T2 period. We consider that remedial/

Project	Rationale for proposed rejection of SHET's proposal
a single transformer substation and the associated equipment. The total cost of the works proposed is £14.3m.	refurbishment works could be undertaken to extend their predicted end of life.
Deanie Substation Works: This is a substation asset replacement project. SHET proposed the replacement of a single transformer substation and the associated equipment. The total cost of the works proposed is £14.6m.	We consider that the asset condition report indicates that the transformer, disconnectors and earth switches do not warrant replacement during the RIIO-T2 period. We consider that remedial/ refurbishment works could be undertaken to extend their predicted end of life.
Quoich Tee Substation Works: This is a substation asset replacement project. SHET proposed the replacement of switching station, and local overhead line diversion works. The total cost of the works proposed is £13.6m.	We consider that the asset condition report does not provide sufficient evidence to support the proposed works. We consider that the chosen solution is not proportionate to the identified needs case. In our view, the assets identified for intervention do not have condition ratings that justify replacement or refurbishment.
Tummel Bridge Substation Works: This is a substation asset replacement project. SHET are proposing the replacement of transformers and new cable works. The total cost of the works proposed is £14.8m.	We consider that the asset condition report does not provide sufficient evidence to support proposed works. We consider that the chosen option is not proportionate to the identified needs case and the scope of the solution seems to have expanded to something far wider with insufficient justification. In our view, the secondary drivers alone are not sufficient to justify substation decommissioning and reconfiguration.
Kilmorack and Aigas Substation Works: This is a substation asset replacement project. SHET proposed the replacement of two single transformer substation and the associated equipment. The total cost of the works proposed is £27.6m.	We consider that the asset condition report does not provide sufficient evidence to support proposed works. We consider that the proposed solution is disproportionate to the needs case. In our view, remedial works to address the oil leakage issue should have been considered, as the primary assets are in reasonable condition.

3.56 SHET is also proposing a portfolio of substation replacement works. For four of the proposed schemes (Keith, Broadford, St Fergus and St Fillans), we identified significant issues with the evidence supporting the needs case, and the dismissal of the "do the minimum" options (namely, limited refurbishments). Accordingly, we propose to exclude these from SHET's baseline NLRE. This would represent a reduction of £48m compared to SHET's submission.

Table 22: Rationale for proposed rejection of SHET's substation scheme works

Project	Rationale for proposed rejection of SHET's proposal
Keith Substation: This is a substation asset replacement project. SHET proposed the replacement of the 132kV busbar. The total cost of the works proposed is £39m.	In our view, the asset condition report does not support the needs case as most of the assets are still within their End of Life period. The chosen solution does not appear to represent value for money. Although it does improve the operational flexibility and resilience of the network and has an environmental benefit. These secondary benefits are not sufficient to justify the scheme.
Broadford Substation: This is a substation asset replacement project. SHET proposed replacement of circuit breakers, switchgear and associated equipment. The total cost of the works proposed is £1m.	In our view the assets to be replaced are not showing significant levels of deterioration, according to the asset condition report. In our view, the presence of type fault issues with the family of circuit breakers has not been substantiated. We also note that only two interventions have been required in the RIIO-T1 period.
St Fillans Substation: This is a substation asset replacement project. SHET proposed the replacement of a single transformer substation and the associated equipment. The total cost of the works proposed £6.8m.	In our view, the asset condition report does not support the replacement of the disconnectors and earth switches or the transformer. We consider that continuous monitoring of the demand profile of Grid Transformer 1 and the undertaking of a 6-monthly oil sampling regime to see if any remedial action is required could extend the lifetime of this asset into RIIO-T3. While we agree that circuit breaker 1T0 should be replaced, we consider that the needs case for the majority of the proposed spend in the supporting EJP has not been established.
St Fergus Mobil: This is a substation asset replacement project. SHET proposed the replacement of substation assets and additional circuit breakers. The total cost of the works proposed £12.7m.	We consider that the issues presented in the EJP can be dealt with by increased maintenance, and that refurbishment option should have been taken forward to detailed analysis as part of the solution development.

3.57 In addition to the refurbishment and replacement expenditure, SHET propose a series of studies on benefits of the installation of synchronous compensators (to increase system inertia) and point-on-wave switching. The total cost of the works proposed is £0.21m.

3.58 In our view, SHET has not presented a clear and unambiguous needs case. It is not clear why SHET needs to undertake this work nor what the output would be used for. However, as noted above, we are proposing the use of a re-opener window to consider the recovery of efficiently incurred costs associated with significant changes to the future Black Start strategy.

Cost efficiency of NLRE submission

3.59 As outlined in the LRE section, our review has considered both the asset cost efficiency and risk elements of SHET's NLRE plan.

3.60 We conducted our own analysis to arrive at our view of efficient unit costs to the projects that have had their needs case accepted. This has resulted in a proposed cost efficiency reduction of £75m across the NLRE projects.

3.61 In reviewing our modelled cost outputs, we identified a systemic difference between SHET's proposed costs for a specific asset type, 132kV OHL (Pole Line) Conductor, for scheme SHNLT2028 Harris - Stornoway 132kV OHL Works, and our view of efficient unit costs for that asset. Following discussion with SHET, we accepted their rationale for the use of a higher unit cost for this project in our modelling. This change has been accounted for in our proposals below.

3.62 Our review of the risk and contingency costs proposed by SHET results in a further £25m decrease in proposed allowances.

3.63 Following our review of the efficient costs for the projects we are proposing to approve, we propose to reduce SHET's NLRE submission by £101m. Including the approximately £182m costs relating to rejected schemes less any indirect opex costs, we have removed £284m from SHET's proposed costs and allowed £540.5m as part of the baseline allowance.

Proposal on NLRE capex allowances

3.64 Our proposed allowances for SHET's RIIO-ET2 NLRE plan are set out in Table 23 below.

Table 23: Proposed allowances for SHET's RIIO-ET2 NLRE plan

Scheme Type	2022 (£m)	2023 (£m)	2024 (£m)	2025 (£m)	2026 (£m)	Total (£m)
Replacement	78.6	128.3	98.1	122.3	55.6	482.9
Refurbishment - Major	0.0	0.0	0.0	0.0	0.0	0.0
Refurbishment - Minor	0.0	0.0	0.0	0.0	0.0	0.0
Decommissioning	0.0	0.0	0.0	0.0	0.0	0.0
Spares	5.5	1.5	1.8	1.5	1.5	11.8
Black Start	6.0	11.5	11.5	11.5	5.5	45.8

Scheme Type	2022 (£m)	2023 (£m)	2024 (£m)	2025 (£m)	2026 (£m)	Total (£m)
Losses	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0
Total	90.0	141.3	111.3	135.3	62.6	**540.5**

High and Lower Confidence proportion in baseline totex allowance

3.65 Applying the methodology as set out in the Core Document, we assess that in our proposed baseline allowance for non-load related capex, £72.5m is high confidence and £461.5m is lower confidence.

BPI stages 3 and 4

3.66 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.

3.67 We consider that SHET provided suitable independent cost information for costs relating to 132kV OHL (Pole Line) Conductor in scheme SHNLT2028 Harris - Stornoway 132kV OHL Works. For these costs we propose to give an allowance that matches what has been proposed by SHET and these costs have been classified as high confidence costs. We have classed all other costs in SHET's NLRE proposal as lower confidence, as we consider that SHET did not provide sufficient independent cost information to support a high confidence classification for these costs. This equates to the classification of £706m of SHET's NLRE submission as lower confidence.

3.68 Of this, we propose to disallow £244m as unjustified or inefficient costs. Accordingly, our consultation position is that these attract a £24.4m disallowance penalty under the BPI stage 3 mechanism. We also propose that there are no stage 4 rewards under this cost category.

NLRE PCDs

3.69 The outputs associated with this funding are tracked through the Network Asset Risk Metric (NARM) and are detailed in our NARM Annex.

Non-operational Capex

Background

3.70 Non-operational capex costs comprise the following four categories:

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

3.71 SHET requested an allowance of £112.4m 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.[21]

Consultation position

Property

3.72 Property costs for SHET consisted of a number of discrete investments that were detailed in EJPs. We assessed the needs case and cost efficiency at an individual scheme level. Our proposed funding and rationale are set out below.

Table 24: Proposed allowances for SHET's property costs

Scheme	Funding Request £m	Funding Proposed £m	Rationale for proposed funding
Materials Mgt/ Warehousing	37.6	0	In our view, SHET has not provided sufficient justification for the preferred option of two new warehouses. The corresponding EJP does not provide a clear and unambiguous needs case or demonstrate value for money or efficiency.
Climate Change /Sustainability	15.7	15.7	Funding provided in full, details of the projects and funding rationale are included in the EAP section of the ET Annex.
Operations centre	15.0	0	In our view, SHET has not provided sufficient justification for the preferred option of a new control room and associated building. The corresponding EJP does not provide a clear and unambiguous needs case or demonstrate value for money or efficiency.

[21] ET Annex, Chapter 3.

Scheme	Funding Request £m	Funding Proposed £m	Rationale for proposed funding
Emergency Response (masts)	1.4	1.4	Funding provided in full as we consider that SHET has presented both a clear and unambiguous needs case and a proportionate solution.
TOTAL	**69.7**	**17.2**	

STEPM

3.73 SHET's STEPM funding request of £1.0m is in line with RIIO-ET1 historical run rates. This is in line with our expectation, as this cost category will involve replenishment of existing equipment and so track historical rates. Accordingly, we propose to provide the full funding request.

Vehicles and Transport

3.74 SHET did not request funding for vehicles and transport. SHET's fleet is managed through vehicle leasing and therefore no expenditure is captured through non-operational capex.

IT&T

3.75 SHET proposed fourteen IT&T projects for the RIIO-ET2 period. Following scrutiny by both Ofgem and its external advisors, we have concluded that all of these projects are at a sufficient stage of maturity that we are able to assess and approve their needs cases. However, we consider that the associated costs lack robustness. In line with the process described in the ET Annex, we have made adjustments to proposed allowances. SHET requested a total of £41.7m for their IT&T projects of which we have allowed £36.6m. Further details on the assessment of the individual projects can be found in our consultant's report.[22]

Proposal on non-operational capex

3.76 The proposed overall allowance for SHET's non-operational capex is set out in Table 25 below.

[22] Please refer to Atkin's IT&T assessment report, published as part of this consultation

Table 25: Proposed non-operational capex allowances

Cost Category	SHET Submission	Volume reductions	Cost reductions	Ofgem Allowance
Property	69.7	52.5		17.2
IT&T	41.7		5.1	36.6
STEPM	1.0			1.0
Vehicles & Transport				
TOTAL	112.4	52.5	5.1	54.8

High and Lower Confidence proportion in baseline totex allowance

3.77 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

3.78 We are proposing to disallow £52.5m of lower confidence and inefficient property costs, which results in a BPI stage 3 penalty of £5.25m. Our consultation position is also that there are no stage 4 rewards under this cost category.

Non-operational capex PCDs

3.79 We have considered whether there should be any PCDs associated with these allowances. Our consultation position is that it would be difficult to set meaningful PCDs around the IT&T projects, since they are still in a developmental stage and could be implemented in several different ways. Instead, we would expect SHET to report on their delivery of these through their RIIO-ET2 annual reporting. The climate change/sustainability work would be monitored through SHET's Environmental Action Plan reporting.

Operational expenditure (Opex)

3.80 Operating expenditure comprises network operating costs and indirect operational expenditure. Opex comprised a total of £568m out of SHET's submission.

Network operating costs

3.81 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

Consultation position

3.82 All of the consultation positions proposed below are based on the comparison of SHET's proposed rates with their historically incurred RIIO-ET1 rates, as described in the sector document. The exception is in the "Operation Protection Measures and IT Capex", which has been reviewed separately due to its bespoke nature.

3.83 SHET argues in its BP that the increased spend on direct opex is due to the increase in the size of its network in RIIO-T1 and into the RIIO-T2 period. However, it has not provided satisfactory evidence to substantiate that claim. At this stage, we do not think there is merit in the magnitude of their proposed increases.

Table 26: Proposed Network Operating Costs allowances

Sub-category	SHET Submission (£m)	Work/volume reductions (£m)	Cost reductions (£m)	Ofgem allowance (£m)
Faults	4.7	0.0	1.8	2.9
Inspections	16.1	0.0	7.0	9.2
Repairs and Maintenance	51.8	0.0	32.3	19.4
Vegetation Management	9.8	0.0	0.7	9.1
Operational Protection Measures and IT Capex	103.0	72.4	0.0	30.6
Legal and Safety	22.5	0.0	3.3	19.1
Total	207.8	72.4	45.2	90.2

3.84 The rationale for the proposed "Operational Protection Measures and IT Capex" reductions are given in the table below.

Table 27: Rationale for proposed "Operational Protection Measures and IT Capex" reductions

Project	Rationale for proposed rejection of SHET's proposal
Integrated Condition Performance Monitoring: SHET propose the rollout of digital condition monitoring equipment to legacy equipment and substations. The total cost of the works proposed is £43.394m.	In our view, SHET has not presented a clear and unambiguous needs case. The majority of the monitoring proposed in this scheme is not critical to the safe operation of the transmission system. Although there may be benefits from an Integrated Condition and Performance Monitoring system, it is not clear what the measurable outputs of this scheme would be and SHET have systems in place to mitigate the risks presented in the EJP.
Transmission Communications Upgrade. SHET proposed the rollout of high speed and high bandwidth data connections to each SHE Transmission substation sites to enable long term implementation of Internet Protocol solutions and the wider digital substation strategy. The total cost of the works proposed is £ 29.022m.	In our view, SHET has not presented a clear and unambiguous needs case. The justification for the needs case is based on the increasing digitisation of the SHE Transmission network and the integrated condition performance monitoring project. It is not clear what the material outputs of this scheme would be.

3.85 Our view is that since the allowances are based on RIIO-ET1 incurred historical costs, all but the "Operational Protection Measures and IT Capex" cost categories are considered to be high confidence costs. The bespoke nature of the operational protection measures and IT capex means this is considered to be lower confidence.

3.86 We consider that the original requested amount that we have deducted in the lower confidence category was inefficient and therefore would be subject to the BPI stage 3 penalty mechanism.

3.87 Our consultation position is that we are not proposing any new PCDs in this cost category.

Indirect operational expenditure

3.88 Indirect opex comprises Business Support Costs (BSC) and Closely Associated Indirects (CAI).

3.89 The sector document 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 which 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 28 : Proposed BSC Allowances

Cost Category	SHET Submission (£m)	Volume reductions (£m)	Cost reductions (£m)	Ofgem Allowance (£m)
Information Technology & Telecoms (IT&T)	33.8		0.7	33.1
Property management	12.2			12.2
Audit, finance, and regulation	15.7			15.7
HR and non-operational training	7.1			7.1
Insurance	7.1			7.1
Procurement	14.8			14.8
CEO and group management	14.4			14.4
TOTAL	104.9		0.7	104.2

Table 29: Proposed CAI Allowances

Cost Category	SHET Submission (£m)	Volume reductions (£m)	Cost reductions (£m)	Ofgem Allowance (£m)
Operational IT & Telecoms	10.8	0.1		10.7
Project management	49.6	19.0		30.5
Network design and engineering	16.9	6.5		10.4
System mapping	1.8	0.7		1.1
Engineering management and clerical support	126.1	48.5		78.0
Network policy (including R&D)	8.2	3.1		5.0
Health, safety, and environment (HSE)	5.2	2.0		3.2
Operational training	6.5	2.4		3.9
Store and logistics	5.1	1.9		3.1
Vehicles and transport	10.4	4.0		6.4
Market facilitation	2.1	0.8		1.3
Network planning	12.8	4.9		7.9
TOTAL	**255.4**	**93.9**		**161.5**

3.90 Based on our assessment of the above, we propose to reduce SHET's indirect opex request by £94.6m, resulting in £265.7m as part of the baseline allowance.

3.91 We consider all of the indirect opex costs to be high confidence, as we can construct reliable forecasts independent of the companies' submissions. We propose that there are no BPI stage 4 rewards for SHET in this cost category.

3.92 Our consultation position is that there are no PCDs associated with this cost category.

Other costs

3.93 The "other costs" category comprises cyber security costs, physical security costs and injurious affliction costs.

3.94 We are not publishing information on cyber costs in the public domain, due to the associated security issues. SHET will receive a report on their submission from Ofgem's cyber-security team.

3.95 We have not yet assessed the physical security cost submission. This will be assessed in the period between draft and final determinations.

3.96 SHET originally submitted a proposal for injurious affection to be dealt with as a UM. However, when it became apparent that this was submitted as a baseline request by the other TOs, it asked for this to be considered as a baseline item. However, SHET did not submit its evidence to substantiate the amount being claimed until late in the process.

3.97 We have included both physical security and injurious affection costs, as submitted by SHET, in the baseline allowance. We will assess the validity of these submissions between now and the final determinations, and communicate these in advance to SHET so they can take an informed view on these when considering their overall position on the Final Determinations.

3.98 Accordingly, we have neither formed a view on the confidence level of these costs, nor considered whether they are subject to stages 3 or 4 of the BPI. Also, there are currently no proposals for any PCDs to be attached to these cost categories, but this position may change once they have been assessed.

Ongoing efficiency adjustment

3.99 We have applied our ongoing efficiency adjustment in line with the process set out in the Transmission sector document. This has resulted in a downward adjustment of SHET's totex allowance of £98m.

Consultation questions on Chapter 3

SHETQ6. Do you agree with our proposed allowances in relation to load related capex? If not, please outline why.

SHETQ7. Do you agree with our proposed allowances in relation to non-load related capex? If not, please outline why.

SHETQ8. Do you agree with our proposed allowances in relation to non-operational capex? If not, please outline why.

SHETQ9. Do you agree with our proposed allowances in relation to network operating costs? If not, please outline why.

SHETQ10. Do you agree with our proposed allowances in relation to indirect operational expenditure? If not, please outline why.

SHETQ11. Do you have any other comments on our proposed allowances for SHET?

4. Adjusting baseline allowances

Introduction

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

- Firstly, we set out the SHET 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 SHET proposed in its Business Plan, and any bespoke UMs that we propose to apply to SHET.

Common UMs

4.2 The common UMs that we are proposing for all companies in RIIO-ET2 are set out in Table 28. Further details on these UMs are set out in the ET Annex.

Table 30: Proposed common UMs applicable to SHET

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.[23] We have considered the extent the supporting information justifies the key criteria outlined in the Business Plan Guidance (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 the Core Document.

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

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

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

Table 31: SHET's bespoke UM proposals

[23] Paragraph 6.7, ET Annex.

Output name and description	Consultation position
Subsea cable repair re-opener: To cover high cost low probability events, such as sub-sea faults or unforeseen damage revealed by inspections.	**Accept:** See further down this chapter.
Operating Cost Escalator: SHET proposed a cost escalator to cover cost associated with expansion of inspection and maintenance activities, developing new processes and procedures for new technology on the network, and back office costs like buildings and fleet, following new capital investment.	**Accept as common UM:** See ET Annex, Operating Cost Escalator.
Operability and System Management, including Black Start: SHET proposed a mechanism to allow costs associated with ESO requests under the System Operator - Transmission Owner Code Procedures (STCP) to be recovered. In addition to STCP requirements, SHET proposed a series of reopeners to meet future black start requirements and system operability concerns (Harmonics, Intertrips etc).	**Accept as common UM:** See ET Annex, MSIP.
Strategic Wider Works: SHET proposed to continue the RIIO-1 UM for assessing the need for and cost of large transmission investments.	**Accept as common UM:** See ET Annex, LOTI.
Volume Driver: SHET proposed an automatic mechanism whereby fixed investment allowances would be released when predefined events occur, for example, associated with the connection of a new renewable generator.	**Accept:** With adjustment to form a common volume driver design for all three TOs (See further detail in ET Annex) with company-specific parameters. Our initial view of the parameters are: Generation/demand - £61k/MW / £61k/MVA Overhead line - £101k/km Cable – £774k/km These values will be subject to further review.
High Value Transmission Projects: To assess funding for predefined investment types.	**Reject:** We propose to reject SHET's proposal because we consider that the policy intent is covered by our proposed common MSIP re-opener, detailed in our ET Annex.
Pre-Construction: SHET proposed a close-out mechanism for 'use it or lose it' allowances for large transmission investments, with scope for in period substitution.	**Reject:** We propose to reject SHET's proposal because we consider that the policy intent of SHET's proposal is covered by our proposed common Pre-Construction Funding (PCF) UM, detailed in our ET Annex.
Sustainability Escalator: SHET proposed a mechanism to provide an annual increment of 0.5% of capital spend in the year after completion to offset potential costs for managing work associated with reducing GHG emissions.	**Reject:** We consider that SHET did not provide any substantive justification for this proposal. In any event, the opex escalator covers the same ground, but without the proposed increment being specifically tied to a GHG purpose.

HVDC Centre: SHET proposed a re-opener to cover the potential need for physical expansion.	**Reject:** SHET proposed the HVDC centre re-opener to cover the potential need for physical expansion.[24] However, in its submission SHET has not provided details of any specific projects or investments that are likely to trigger the requirement for additional space at the HVDC centre. On the basis that the need is not clear, we propose to reject this re-opener. We note that the HVDC was originally funded through the Network Innovation Competition (NIC). The allowance for continued operation of the centre after the NIC funding period is included in the operating costs allowed for SHET for RIIO-T2. Please see further information in Chapter 3.
Landowner Compensation: SHET proposed a mechanism to compensate landowners when SHET installs equipment on, or needs access rights to, land. This is proposed as an uncertainty mechanism rather than being a part of their baseline allowance	**Reject**: We acknowledge that landowner compensation is a legitimate cost for which SHET should be remunerated. In discussions after their BP submission, SHET noted that the other TOs had included this as part of their baseline submissions. We have included landowner compensation as part of SHET's baseline, as we believe it gives SHET the appropriate incentive to pro-actively manage these costs on behalf of consumers. The level of allowance will be subject to further analysis ahead of our Final Determination.
Third Party Driven Need: SHET proposed this mechanism to meet third party requirements from parties other than the ESO. This includes new legislative and regulatory requirements.	**Reject**: We considered that the brief of this proposal was too broad, and there were significant overlaps with other mechanisms we are proposing which will give appropriate levels of protection to SHET.

Subsea cable repair re-opener

Subsea cable repair re-opener	
Purpose	Allows SHET to seek funding for efficient costs for resolving unexpected subsea cable faults, or for mitigating the risk of these faults occurring.
Benefits	Ensures that the consumer is only paying to manage necessary risks.

Background

4.8 SHET has two subsea cables on its network, Caithness to Moray and Kintyre to Hunterston; both are important assets on SHET's network and are due to be inspected during RIIO-T2.

[24] In 2013, SHET received funding from the NIC to develop the HVDC Centre, which enables the planning, development and testing of high voltage direct current transmission solutions in GB. We have recently published a decision to allow SHET to continue to own and operate the HVDC Centre: Decision on the future operation of the HVDC centre following the end of NIC-funding period.

4.9 In its Business Plan, SHET proposed a bespoke re-opener for subsea cables to cover high cost low probability events, such as sub-sea faults or unforeseen damage revealed by inspections.

Consultation position

Output parameter	Consultation position
Re-opener Window (year)	January 2024 and RIIO-2 closeout
Materiality threshold / Trigger	In line with our common approach to re-openers as set out in the Core Document

Rationale for consultation position

4.10 We agree with SHET's proposal of a re-opener for high cost low probability subsea cable events. It would not be reasonable to provide baseline funding for such low probability events, but we consider that these events could have a potentially significant detrimental impact on both the network and consumers if they did occur. This mechanism is designed to ensure that SHET is appropriately funded to avoid those events occurring, or to mitigate their impact if they do.

4.11 The costs associated with subsea cable repair are likely to be material, but are difficult to predict. This re-opener mechanism will allow SHET to seek funding for the efficient costs associated with:

- resolving unexpected subsea cable faults; and
- taking mitigating action to address specific concerns with the health of the cables, revealed by each inspection and supported by the inspection data; where
- the materiality threshold as set out in our common approach to re-openers in the Core Document is met.

4.12 We propose that submissions under this re-opener can be made in January 2024 or during RIIO-2 closeout, which broadly aligns with the proposed inspection windows for the subsea cables. We are proposing to fund SHET's subsea cable inspection and maintenance costs in its baseline allowance.

Consultation questions

SHETQ12. Do you agree with our proposal to accept SHET’s subsea cable repair re-opener?

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.[25] The Core Document 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 SHET's RIIO-2 NIA funding.

Consultation position

Network Innovation Allowance	Company proposal	Consultation position
Level of NIA funding	£8m	£8m *Conditional on an improved industry-led reporting framework.

Rationale for consultation position

5.3 SHET's Business Plan contained a range of NIA-related proposals. It focused on the energy system transition and addressing consumer vulnerability, with initiatives corresponding to SHET's four strategic objectives:

- Stakeholder-led strategy, to support customers, enable wider energy system changes and explore enhanced connection approaches.
- Safe and secure network operation, developing asset and network management, monitoring and operation of the network, and planning and development.
- Sector leading efficiency, looking for supply chain efficiencies, modernising network opportunities and monitoring, and operate the network.
- Leadership in sustainability, reducing the impact on the environment, mitigating climate change and supporting vulnerable consumers.

5.4 SHET'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 projects that will be taken forward will require the NIA in order to progress. Over RIIO-2, it is for SHET to determine which projects it will undertake and, for each, it will need demonstrate why the project cannot be funded through

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

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 SHET's Business Plan against the criteria from our SSMD and Core Document in the table below.

Table 32: Assessment of SHET's Business Plan against NIA criteria

SSMD / Core NIA criteria	Ofgem view
Undertaking other innovation as BAU	**Satisfactorily meets the criterion including:** evidence of clear targets to use innovation to deliver efficiency savings and commitments to use BAU funding for first time deployments of market ready innovations.
Application of best practices	**Satisfactorily meets the criterion including:** evidence of research into and the application best practice within its innovation framework.
Processes in place to roll out proven innovation and the evidence that this is already happening	**Satisfactorily meets the criterion including**: focus on the values associated with rolling out innovation into BAU, evidence of key learnings from RIIO-1 innovation and 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 all NIA requests, we do not consider that SHET has demonstrated that it has tried and tested processes in place to monitor, report and track innovation spending and benefits.

5.6 In RIIO-1, SHET received 0.7% of base revenue as NIA funding, equivalent to around £2m per year. We therefore believe SHET's request is reasonable and proportionate, as it is comparable to the level of NIA funding it received throughout RIIO-1. We propose to allow SHET's requested £8m NIA funding for the RIIO-2 period.

5.7 As detailed in the Core Document, we propose that all 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 will not award NIA funding for RIIO-2.

Consultation questions

SHETQ13. Do you agree with the level of proposed NIA funding for SHET? If not, please outline why.

Appendices

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Appendix 1 Consultation questions

SHETQ1. Do you agree with our proposals on the bespoke ODIs? If not, please outline why.

SHETQ2. Do you agree with our consultation position to reject the 'RIIO-T2 System Outage Management Proposals to Reduce Constraint Costs'?

SHETQ3. Do you agree with our proposals on the bespoke PCDs? If not, please outline why.

SHETQ4. Do you agree with our proposals on the CVPs? If not, please outline why.

SHETQ5. Do you agree with our proposal to approve the Biodiversity No Net Loss / Net Gain CVP and do you agree with our proposal to re-quantify the value of it?

SHETQ6. Do you agree with our proposed allowances in relation to load related capex? If not, please outline why.

SHETQ7. Do you agree with our proposed allowances in relation to non-load related capex? If not, please outline why.

SHETQ8. Do you agree with our proposed allowances in relation to non-operational capex? If not, please outline why.

SHETQ9. Do you agree with our proposed allowances in relation to network operating costs? If not, please outline why.

SHETQ10. Do you agree with our proposed allowances in relation to indirect operational expenditure? If not, please outline why.

SHETQ11. Do you have any other comments on our proposed allowances for SHET?

SHETQ12. Do you agree with our proposal to accept SHET's subsea cable repair re-opener?

SHETQ13. Do you agree with the level of proposed NIA funding for SHET? If not, please outline why.