

# Consultation

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## Consultation on Bespoke Tower Steelwork and Foundations Re-opener Submission from National Grid Electricity Transmission

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We<sup>1</sup> are consulting on a Bespoke Tower Steelwork and Foundations Re-opener submitted by National Grid Electricity Transmission (NGET). We would like views from people with an interest in electricity transmission. We would also welcome responses from other stakeholders and the public.

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 [Ofgem.gov.uk/consultations](https://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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<sup>1</sup> The terms 'we', 'us', 'our' refer to the Gas and Electricity Markets Authority (the Authority). Ofgem operates under the direction and governance of the Authority.

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## Executive Summary

We are consulting on our assessment of the needs case, optioneering and efficient costs for a Bespoke Tower Steelwork and Foundations Re-opener submission made by National Grid Electricity Transmission (NGET) on 28 July 2022.

This bespoke re-opener allows NGET to request additional funding during the RIIO-2<sup>2</sup> price control in relation to tower steelwork and foundations interventions as per Licence Special Condition (SpC) 3.33<sup>3</sup>. In RIIO-2 Final Determinations,<sup>4</sup> partial funding was awarded for tower steelwork and foundation interventions on the basis of asset condition assessments being carried out to ensure an appropriate level of funding is provided.

It is critical that timely maintenance of electricity towers takes place in order to maintain a safe, reliable and affordable network for the consumer. We recognise the need for NGET to carry out maintenance of the electricity tower network.

We consider that NGET provided sufficient evidence to justify its proposed interventions, including climbing surveys and intrusive investigations. As a result, we are satisfied that NGET's proposed project is in alignment with both long-term business need and stakeholder feedback priorities for a safe, reliable and affordable network.

We consider that NGET used a reasonable approach to narrow down options to a short list of interventions. We agree that a targeted repair approach balances reliability and cost to deliver the most effective intervention for consumers.

We consider the majority of costs submitted by NGET are reasonable and present a significant cost reduction to original business plans put forward in 2019. However, we are proposing to remove a proportion of the costs as we consider some of the activities are Closely Associated Indirect (CAI) activities and are therefore covered by the RIIO-2 Opex Escalator Mechanism<sup>5</sup>. We propose to remove CAI activity costs from the funding total and, as a result, our assessment of efficient costs is less than already provided for in baseline funding. We therefore propose to not award NGET additional funding for this project.

This document presents our initial views and findings to show our minded-to position.

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<sup>2</sup> RIIO stands for Revenues = Incentives + Innovation + Outputs

<sup>3</sup> <https://www.ofgem.gov.uk/industry-licensing/licences-and-licence-conditions>

<sup>4</sup> [https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final\\_determination\\_nget\\_annex\\_revised.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determination_nget_annex_revised.pdf)

<sup>5</sup> [https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final\\_determination\\_nget\\_annex\\_revised.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determination_nget_annex_revised.pdf)

## 1. Introduction

### Section summary

This section introduces our consultation for the Bespoke Tower Steelwork and Foundations Re-opener submitted by NGET in July 2022. Subsequent chapters detail our views on the needs case, optioneering, and costs put forward by NGET for these proposed works.

### What are we consulting on?

- 1.1 We are consulting on our view of needs case, optioneering and efficient costs for a Bespoke Tower Steelwork and Foundation Re-opener submission proposed by NGET in July 2022.
- 1.2 NGET submitted this project under SpC 3.33 Tower Steelwork and Foundations Re-opener, proposing steelwork and foundation works on a range of routes.
- 1.3 NGET considers that this re-opener submission meets the relevant criteria set out in both SpC 3.33 and the RIIO-2 Re-opener Guidance and Applications Requirements.<sup>6</sup> Further detail can be found in Appendix 2.

### Background information on the re-opener

- 1.4 The RIIO-2 price control runs from 1 April 2021 until 31 March 2026. It includes a range of Uncertainty Mechanisms (UMs) that will allow us to assess further funding during RIIO-2 as the need, cost or timing of works becomes clearer. This ensures that consumers fund projects only when there is clear evidence of benefit to consumers, and we have clarity on likely costs. These mechanisms also ensure that the RIIO-2 price control has flexibility to adapt as the pathways to Net Zero target become clearer.
- 1.5 In RIIO-2 Draft Determinations,<sup>7</sup> Ofgem proposed a set allowance based on RIIO-ET1 expenditure, due to insufficient evidence, for three workstreams: tower painting, tower steelwork intervention and tower foundations. Ofgem noted a significant increase in cost over the T1 figures but evidence was not provided by NGET to justify the increase. NGET provided a significant amount of detail, including correcting errors and clarifying the asset data to support the investment

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<sup>6</sup> [Re-opener Guidance And Application Requirements Document Version 2.pdf](#)

<sup>7</sup> [https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft\\_determinations\\_-\\_nget\\_annex\\_redacted\\_0.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2020/07/draft_determinations_-_nget_annex_redacted_0.pdf)

proposal, between draft and final determinations. As a result, full funding was approved for Tower Painting at final determinations. However, for both steelworks and foundations, there was a heavy reliance on surveys which had not yet been completed. As highlighted in final determinations paragraph 3.55, partial baseline funding was provided to allow for survey works and immediate interventions, and a re-opener was created to facilitate extra funding once the surveys were complete<sup>8</sup>.

- 1.6 Baseline funding of £20.089m was awarded, which comprised of £5.708m for tower steelwork and £14.381m for tower foundations.
- 1.7 The Bespoke Tower Steelwork and Foundations Re-opener was created to allow NGET to request additional funding during the RIIO-2 price control in relation to tower steelwork and foundations interventions subject to meeting certain conditions. NGET had to perform condition assessments across a range of assets to ensure a clear picture of the network towers and foundations before any submission.

### Consultation approach

- 1.8 In RIIO-2 final determinations, NGET received partial funding for tower steelworks and foundations due to insufficient evidence around asset condition. A bespoke re-opener was created to allow NGET to apply for additional funding for tower steelwork and foundations after completion of survey works to clarify the asset data.
- 1.9 NGET submitted to Ofgem a proposal for additional funding for tower steelwork and foundations interventions. Within the application, NGET have provided their views on the following:
  - The needs case
  - The alternative options and justification for the proposed solution
  - The efficient costs for the proposed project.
- 1.10 By this consultation we are seeking views on our assessment of NGET's application and on our minded-to position to approve this proposal for additional funding.

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<sup>8</sup>[https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final\\_determination\\_nget\\_annex\\_revised.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determination_nget_annex_revised.pdf)

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## Context and related publications

1.11 This document is intended to be read alongside:

- RIIIO-2 Re-opener Guidance and Application Requirements Document<sup>9</sup>
- NGET Special Licence Conditions.<sup>10</sup> (SpC 3.33)

## Consultation stages

1.12 This consultation will run for four weeks and close on 17 March 2023. We will review and publish the non-confidential responses after the consultation closes and publish our decision in due course.

## How to respond

1.13 We want to hear from anyone interested in this consultation. Please send your response to the person or team named on this document's front page.

1.14 We've asked for your feedback in each of the questions throughout. Please respond to each one as fully as you can.

1.15 We will publish non-confidential responses on our website at [www.ofgem.gov.uk/consultations](http://www.ofgem.gov.uk/consultations).

## Your response, data and confidentiality

1.16 You can ask us to keep your response, or parts of your response, confidential. We'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000, the Environmental Information Regulations 2004, statutory directions, court orders, government regulations or where you give us explicit permission to disclose. If you do want us to keep your response confidential, please clearly mark this on your response and explain why.

1.17 If you wish us to keep part of your response confidential, please clearly mark those parts of your response that you *do* wish to be kept confidential and those that you *do not* wish to be kept confidential. Please put the confidential material in a separate appendix to your response. If necessary, we'll get in touch with you to discuss which parts of the information in your response should be kept confidential, and which can be published. We might ask for reasons why.

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<sup>9</sup> <https://www.ofgem.gov.uk/sites/default/files/2022-02/Re-opener%20Guidance%20And%20Application%20Requirements%20Document%20Version%202.pdf>

<sup>10</sup> <https://epr.ofgem.gov.uk/Content/Documents/National%20Grid%20Electricity%20Transmission%20plc%20-%20Special%20Conditions%20Consolidated%20-%20Current%20Version.pdf>

- 1.18 If the information you give in your response contains personal data under the General Data Protection Regulation (Regulation (EU) 2016/679) as retained in domestic law following the UK's withdrawal from the European Union ("UK GDPR"), the Gas and Electricity Markets Authority will be the data controller for the purposes of GDPR. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. Please refer to our Privacy Notice on consultations, see Appendix 4.
- 1.19 If you wish to respond confidentially, we'll keep your response itself confidential, but we will publish the number (but not the names) of confidential responses we receive. We won't link responses to respondents if we publish a summary of responses, and we will evaluate each response on its own merits without undermining your right to confidentiality.

## **General feedback**

- 1.20 We believe that consultation is at the heart of good policy development. We welcome any comments about how we've run this consultation. We'd also like to get your answers to these questions:
1. Do you have any comments about the overall process of this consultation?
  2. Do you have any comments about its tone and content?
  3. Was it easy to read and understand? Or could it have been better written?
  4. Were its conclusions balanced?
  5. Did it make reasoned recommendations for improvement?
  6. Any further comments?

Please send any general feedback comments to [stakeholders@ofgem.gov.uk](mailto:stakeholders@ofgem.gov.uk)

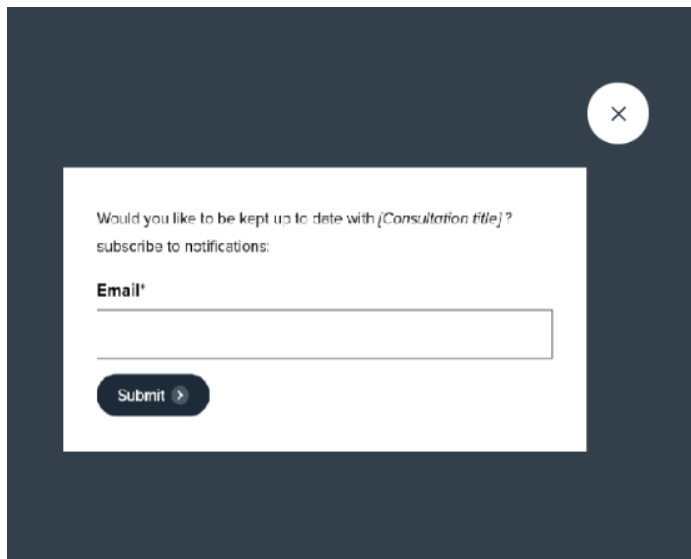
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## 2. Needs case for the proposed project

### Section summary

In this section, we detail our position on the needs case within NGET's Tower Steelwork and Foundations Re-opener submission.

### Questions

**Q1. Do you agree with our view on the suitability of the needs case proposed by NGET?**

### Overview of needs case

- 2.1 The needs case for NGET's re-opener submission is driven primarily by asset condition, specifically assets which have degraded to a particular level identified by NGET guidelines as requiring interventions. NGET highlighted in their re-opener submission that failing to carry out timely maintenance of tower steelworks and foundations could risk the integrity of the approximately 22,000 towers across their networks and lead to the system becoming unsafe and unreliable. The costs to rectify the highlighted risks could be high for consumers and also time-consuming which could lead to considerable and sustained disruption.
- 2.2 NGET claim in their re-opener submission that steelwork typically increases by a grade every 6 years once the painted coating has degraded, and it is assumed a tower will eventually collapse without any intervention. NGET note recent issues with tower foundations on specific OverHead Line (OHL) circuits have led to emergency foundation works on two towers. As part of NGET's submission, Cost Benefit Analysis (CBA) highlights no intervention to be the most expensive option for both steelworks and foundations. Further information on this can be found in chapter 3 below.
- 2.3 As per paragraph 1.5 and 1.6 of this consultation, funding has already been awarded to NGET at RIIO-2 Final Determinations to carry out immediate interventions and survey works. NGET have carried out climbing surveys and intrusive inspections to assess the conditions of steelwork and foundations respectively. As a result, NGET are requesting additional funding for steelwork and foundation repairs.
- 2.4 NGET state poor condition steelworks are initially assessed using High-Definition Camera Assessments (HDCA) obtained from helicopter survey platforms. This

imagery is used to build up an idea of the “macro” health of the tower population. NGET claim a standard visual assessment scoring system is used to assess tower steelwork, where steelwork grades are defined<sup>11</sup> as:

- Grade 1 – Fully painted, overcoat and undercoat intact, fully galvanised, coating intact
- Grade 2 – Paint coating on all surface, but some overcoat may not be intact. Galvanising intact except for small areas of corrosion
- Grade 3 – Very light surface corrosion, majority of coating intact
- Grade 4 – Light pitting, with loss of coating and zinc layers. Bar thickness is still equal to its specification
- Grade 5 – Significant pitting, loss of section clearly visible. Bar thickness is smaller than its specification
- Grade 6 – Perforated element with severe physical damage.

2.5 NGET state foundation interventions have traditionally been carried out on a reactive basis, dealing with issues as they arise and claim this led to a number of unplanned and emergency works during RIIO-1. NGET note their proposal to implement an “enhanced foundation strategy” for RIIO-2 in order to move from a reactive approach of managing network risks posed by tower foundations to a proactive/predictive approach.

### Our initial view of needs case

2.6 We consider there is sufficient justification for the tower interventions proposed in this submission, and that these represent value to consumers. We are satisfied that the submission fulfils the requirements for this bespoke NGET re-opener.

2.7 As per SpC 3.33.4, NGET may use this re-opener to adjust the amount of funding they have received for tower steelwork and foundations interventions as a result

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<sup>11</sup> PS(T)102 – Overhead Line Tower Steelwork Management; TGN(AR)004 – Asset Replacement of OHL Priority Ranking of Replacement Candidates; PS(T)131.04 – OHL Replacement and Refurbishment (NGET internal only policies)

of clarification of the needs case in relation to tower steelwork and foundations interventions. As per SpC 3.33.5, NGET cannot use the re-opener as a result of:

- steelwork being replaced due to condition not strengthening
- steelwork replacement delivered in association with overhead line conductor
- fittings projects, or
- load-related projects.

2.8 Based on our assessment, we consider that NGET has provided sufficient evidence on the need for tower steelwork and foundations interventions by taking the necessary surveys to provide the required data to support such proposals. We agree repair of the flagged assets will be crucial in continuing to provide consumers with a safe, reliable and affordable network.

2.9 Overall, our minded-to view of the needs case is that NGET has provided sufficient justification of a clarification to the needs case, as per SpC 3.33.4, which means that the proposed tower interventions are required and in the best interests of consumers.

2.10 We set out in the following chapter our view on the optioneering carried out by NGET.

### 3. Assessment of options and justification for the proposed project

#### Section summary

We detail our assessment of all the options considered by NGET and its justification for the chosen options. We set out our minded-to view of their proposed solution.

#### Questions

**Q2. Do you agree with our assessment of the range of options to meet the needs case?**

**Q3. Do you agree with our minded-to view of the solution proposed by NGET?**

#### Option selection

3.1 To address the needs case for the tower steelwork and foundations works, NGET provided an overview of the long list of options considered, along with their variations. These are:

Steelwork:

1. Do nothing
2. Paint or treat the bar
3. Replace the bar piecemeal
4. Replace tower section
5. Full tower replacement

Foundations:

1. Do nothing
2. Foundation/pile cap repair
3. Foundation strengthening or upgrade

4. Replace full tower
- 3.2 NGET highlighted that survey information has been used to provide a more detailed view of each circuit which can now be used to make decisions on both route-by-route and case-by-case basis. A case-by-case option may result in a combination of options specific to addressing individual assets rather than a single-strategy approach over all assets.
- 3.3 The options for OHL steelworks are for each individual bar or zone of bars on towers which were identified by Level 1 helicopter data. These subsequently had Level 2 climbing surveys undertaken. The options for OHL foundations are for each tower surveyed as part of preparation for this re-opener submission.

## **Steelwork**

### *Option 1: Do nothing*

- 3.4 NGET noted if no intervention is taken on corroded or damaged steelwork, it would greatly increase the likelihood of tower collapse under extreme weather condition due to ultimate failure of critical steelwork members. This would require emergency tower repair and NGET claim this would cost significantly higher than a proactive intervention.
- 3.5 NGET also noted this would deviate from National Grid Guidance on both Overhead Line Tower Steelwork Management and Tower Painting<sup>12</sup>. NGET included this as the baseline in its costs benefit assessment.

### *Option 2: Paint or treat the bar*

- 3.6 NGET have explained bars identified as grade 3 or below (see paragraph 2.4 of this document) can be painted, which applies a protective barrier to the steelwork. This effectively reduces the condition to grade 1 and, in typical environmental conditions, no intervention should be required for a further 18 years. Grade 4 bars can have an advanced treatment applied, which will produce the same result as grade 3 and below painting. However, it is a more involved and expensive process.

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<sup>12</sup> PS(T)102 – Overhead Line Tower Steelwork Management and TS 3.04.34 Overhead Line Tower Spot Surface Preparation and Painting (NGET internal only policies)

- 3.7 NGET also claim this option would involve tower painting as per NGET Policy. Grade 3 and 4 bars identified via climbing surveys have been subsumed by OHL painting portfolio; no costs for this are included in this re-opener submission.

*Option 3: Replace the bar piecemeal*

- 3.8 NGET state bars individually identified as grade 5 or 6 cannot be treated or painted to improve their condition. Grade 5 and 6 have their thickness measured via climbing survey and overall tower strength and load capability modelled to determine whether structural integrity is compromised. Individual bars can be replaced on a piecemeal basis with new steelwork members. NGET included this option as part of its costs benefit assessment.

*Option 4: Replace tower section*

- 3.9 If many bars in close proximity require replacement, NGET noted an option can be to replace an entire section of tower. Bars in close proximity refers to steelwork which forms an individual tower section, for example a crossarm, tower peak or body section. This would typically be where material savings of piecemeal replacements are outweighed by long outages and labour costs, such as extremities of the towers including crossarms of earthwire peaks. For example, NGET claim it could prove quicker and more cost effective to replace a whole crossarm rather than a large number of individual bars. NGET included this option as part of its costs benefit assessment.

*Option 5: Full tower replacement*

- 3.10 NGET state if bar condition throughout the entire tower is poor enough, a full replacement may be the most cost-effective option. Similar to option 4, this is when piecemeal replacements would be time or cost prohibitive. NGET included this option as part of its costs benefit assessment.

**Foundations**

*Option 1: Do nothing*

- 3.11 NGET noted that pre-reopener submission surveys assessed a number of towers and some with defects. If nothing is done, it is claimed the tower foundation would become compromised and greatly increase the risk of collapse during extreme weather conditions. This would likely lead to high costs and disruption for the consumers. NGET included this as the baseline in its costs benefit assessment.

*Option 2: Foundation/pile cap repair*

- 3.12 NGET state such minor remedial works taken to above or below-ground foundations could include replacements to pile caps, protective muff replacements or repairs to tower legs. NGET included this option in its costs benefit assessment.

*Option 3: Foundation strengthening or upgrade*

- 3.13 NGET note the current foundation would be increased in size or capacity by the addition of concrete either below or above ground, due to the degradation of the existing materials. If additional strengthening would not be enough to increase the foundation capability, the foundation type could be converted such as by installing piles to a conventional foundation type. NGET included this option in its costs benefit assessment.

*Option 4: Replace full tower*

- 3.14 NGET claim if foundation condition is too poor to benefit from any remedial works, the only option is to construct a new tower in-line to the existing route and demolish the old tower. NGET have not included this option in its costs benefit assessment.

**Our view of the potential options**

- 3.15 Based on our assessment of NGET's evaluation of the options, we are satisfied NGET have considered an appropriate range of possible alternatives to address the needs case.
- 3.16 We agree with NGET's decision to use survey data to facilitate a case-by-case approach rather than single strategy method as this may lead to replacement of good condition assets which would lead to unnecessary costs for the consumer.
- 3.17 For assets which have been identified as requiring remedial works via surveys, we agree the option of do nothing (Steelworks Option 1 and Foundations Option 1) could lead to compromised assets and potential collapse during extreme weather conditions. This could lead to elevated costs and continued disruption which would be unacceptable for consumers.
- 3.18 Additionally, we are satisfied the options are within the scope of the re-opener, consistent with SpC 3.33.5. This is because none of the steelwork options being replaced are due: to condition not strengthening; steelwork replacement



delivered in association with overhead line conductor; fittings projects; or load-related projects.

### **NGET's methodology for option selection**

- 3.19 NGET's list of options covered a number of assets and potential solutions.
- 3.20 NGET stated the preferred option for OHL steelwork is to replace all Grade 5 and 6 bars identified to be in poor condition. For Grade 6 bent bars, 25% are deemed still fit for purpose and will be retained. Grade 3 and 4 bars identified will be addressed by OHL tower painting portfolio and no additional costs are required under this re-opener. Whole tower sections will be replaced where a significant number of critical bars in close proximity to other secondary corroded bars were identified on the earthwire peaks. Close proximity refers to steelwork which forms an individual tower section, for example a crossarm, tower peak or body section. Although this may include replacement of members graded 4 or lower, NGET claim it is more cost effective to replace every critical bar rather than replacing a lower tonnage of steelwork. NGET have provided CBA to highlight it is sometimes more cost effective to replace whole sections rather than piecemeal replacements and note longer outages would be required. NGET claim this is hard to secure and comes with additional cost for Senior Authorised Person (SAP) and control room time.
- 3.21 NGET state the preferred option for OHL tower foundations is to take no action on most of the towers surveyed. Of the towers surveyed, issues have been identified on some of the towers.

### **NGET's economic assessment of short-listed options**

- 3.22 NGET carried out a cost benefit assessment of its option shortlist. NGET noted difficulties in applying a traditional CBA to their optioneering as the work required for each OHL tower was considered individually rather than determining a single strategy option to apply to the entire route or whole steelwork/foundations portfolio. NGET have submitted CBA examples to compare specific examples where there are at least two valid intervention types in order to demonstrate cost-differential between options.
- 3.23 For steelwork, NGET compared:

- Do nothing vs. whole tower replacements and targeted piecemeal steelwork replacements
- Do nothing vs. piecemeal replacement of earthwire peaks and full section replacement, and
- Do nothing vs. replacement of Grade 4 bars and treatment/recovery of Grade 4 bars.

3.24 For the 3 steelwork intervention comparisons above, NGET found piecemeal steelwork replacement, wholesale earthwire peak replacements and treatment/recovery of Grade 4 bars to be the most cost-effective solution.

3.25 For Foundations, NGET compared:

- Do nothing vs. in-situ foundation upgrades and targeted foundation repairs.

3.26 For the above Foundation interventions comparison, NGET found targeted foundation repairs to be the most cost-effective solution.

3.27 NGET's preferred option also includes climbing surveys in preparation for RIIO-3. These have recently been identified as containing Grade 5 or 6 bars.

### **Our minded-to view on the preferred solution**

3.28 We have considered NGET's submission on the proposed solution and economic assessment of the options considered, and we are satisfied that the combination of NGET's analysis of asset surveys and cost benefit assessment has identified the appropriate level of interventions to address remedial asset work required. We consider that NGET appropriately applied its methodology for the selection of options and the identification of its preferred option.

3.29 Overall, our minded-to view is to accept the justification for the targeted interventions that NGET have put forward. We agree with NGET's options assessment and we are satisfied this is the most cost-effective solution to provide the proposed repair works which is in the interest of consumers.

3.30 With regards to proposed climbing surveys for RIIO-3, we propose to approve these costs. In RIIO-2 final determinations, Ofgem approved NGET's full funding

request for inspections of 96.7m<sup>13</sup>, on the expectation that there was a significant increase in the level of asset specific data required to evaluate network risk.

NGET provided additional information after this re-opener submission to highlight how inspections and surveys are utilised. Helicopter inspections are used to determine overall asset health of tower population, whereas climbing surveys are used to produce specific material ordering schedules for interventions previously identified from these inspections. With this specific additional justification provided, we accept these proposed survey costs (£349,001).

- 3.31 In the following Chapter, we assess the costs that NGET submitted for this project.

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<sup>13</sup> [https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final\\_determination\\_nget\\_annex\\_revised.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determination_nget_annex_revised.pdf)

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## 4. Cost assessment of the proposed project

### Section summary

This section sets out our assessment of the submitted costs of the Tower Steelwork and Foundations work.

### Questions

**Q4. Do you agree with our minded-to view on NGET's proposed Bespoke Re-opener costs? Please provide reasons to support your views.**

### Overview of NGET's project costs

- 4.1 In RIIO-2 Final Determinations, NGET was awarded partial baseline funding due to insufficient evidence for the needs case around Tower Steelwork and Foundations. This partial funding was to address immediate interventions and survey costs to provide comprehensive asset condition details to support any re-opener request. NGET is applying for additional funding to carry out required works based on these surveys.
- 4.2 NGET's RIIO-2 baseline funding is £5.708m for tower steelwork and £14.381m for tower foundations, a combined total of £20.089m.
- 4.3 NGET have requested additional funding of £4.023m to deliver interventions under the Bespoke Tower Steelwork and Foundations Re-opener. This is to cover £19.225m for steelworks and £4.887m for tower foundation repairs, to give a combined total of £24.112m. Pre-reopener submission survey costs (£1.91m) and T3 climbing surveys (£0.349m) have also been included. NGET propose to apply for the difference between the combined baselines and combined proposed total expenditure (£24.112m - £20.089m = £4.023m).
- 4.4 Table 1 below summaries NGET's estimated RIIO-2 expenditure and re-opener proposed costs.

**Table 1: NGET's costs and additional funding request**

	<b>NGET updated cost estimates 2018/19 prices, as per re-opener submission (£m)</b>	<b>Previously provided baseline funding 2-18/19 prices (£m)</b>	<b>NGET requested funding 2018/19 prices, as per re-opener submission (£m)</b>
<b>Steelwork</b>	17.704	5.708	-
<b>Foundations</b>	4.149	14.381	-
<b>Pre-reopener submission surveys</b>	1.910	-	-
<b>RIIO-T3 climbing surveys</b>	0.349	-	-
<b>Total</b>	24.112	20.089	4.023 (24.112-20.089)

- 4.5 NGET's steelworks funding request is for the following routes: 4ZA, ZL, ZM, ZZS, 4VN, ZX, YXA, ZH and defects. NGET highlighted five of the routes were costed as individual projects (4ZA, ZL, XM, ZZS and 4VN) with the remaining (ZX, YXA, ZH) being bundled as a single project for a contractor to deliver due to lower volumes. The costs do not include spend-to-date.
- 4.6 NGET's foundation works request were categorised into three distinct intervention types: muff replacement, leg repair and pile cap replacement. Each was costed as a single project.
- 4.7 NGET state all RIIO-T3 climbing survey costs relate to towers identified in preparation of steelwork volumes for RIIO-3. These towers were selected as they have one or more grade 5 or 6 steelwork zones identified from helicopter visual inspections.
- 4.8 NGET have clarified<sup>14</sup> there are hundreds of towers detailed in the supporting documentation, however, some of these are to be subsumed into their respective RIIO-2 refurbishment schemes. NGET confirm tower 4VM091 was omitted from re-opener report section 6 in error.

<sup>14</sup> Clarified during Supplementary Question (SQ) process after re-opener submission. NGET provided narrative confirming routes to be surveyed and that none of these have been previously surveyed.

4.9 NGET's cost submission was broken down into a combination of:

For Steelwork:

- Land and consent management
- Internal procurement
- Overhead lines
- NG commissioning
- Contingency.

For Foundations:

- Land and consent management
- Overhead lines
- NG ET Operations (NG ET Ops)
- Contingency.

And T3 climbing surveys.

4.10 NGET note the following have been blanked for cost estimates as these fall under Closely Associated Indirect (CAI) costs:

- NG Project Management
- Optioneering/Development
- Closeout.

4.11 NGET state in-house cost estimating tools are used to cost each of the options. Rates for each physical activity and external project management are estimated on a combination of current market rates for equipment/materials, contractor rates and fees and recently completed projects. Final values are then again

benchmarked against recent projects to ensure accuracy and consistency are maintained.

4.12 NGET note costs for both tower steelwork and foundations include a small contingency value (£0.871m for steelwork and £0.373m for foundations) to account for any unforeseen issues during delivery. A high-level Quantitative Risk Assessment (QRA) was carried out for this re-opener submission to define the risk pot for each project, taking into account specific considerations. Inputs used for the QRA were determined from previously delivered projects and typical risks that occurred during delivery such as:

- Cancellation of outages due to operational requirements
- Raw materials prices
- Discovery of protected invasive species
- Access routes differ to red line drawings
- Reprioritisation of resource
- Extreme weather (1 in 10 year events)
- Delays/refusal of permission from third parties
- Theft.

4.13 NGET submitted a risk register detailing individual QRA results as part of their re-opener submission.

### **Our view of efficient project costs**

4.14 NGET's original funding request in RIIO-2 was £53m and £52m for tower steelwork and foundations respectively. The reduced funding request NGET have now submitted of £19.225m and £4.887m respectively for tower steelwork and foundations is more than we awarded in the RIIO-2 Final Determinations.

4.15 We are satisfied that the costs submitted for directly carrying out asset repairs and replacements outlined in this re-opener submission to be reasonable and

efficient. Further detail on optioneering carried out by NGET and our views can be found in Chapter 3.

- 4.16 We are satisfied in the level of survey data obtained ahead of this re-opener submission as a result of the pre-reopener submission surveys undertaken by NGET. We accept these costs as reasonable and efficient.
- 4.17 After considering the specific additional justification provided during SQ process, we accept the T3 climbing survey costs in this instance. Further detail is discussed in paragraph 3.30.
- 4.18 However, we do not agree with particular direct costs that have been included in this submission as we think these are closely associated indirect (CAI) costs. Although we acknowledge NGET have already omitted some indirect costs from their submission, we additionally propose to remove the following CAI costs from the overall funding total:
- Stores and Logistics
  - Project Management
  - Engineering Management and Clerical Support
  - Network Design and Engineering
  - Health and Safety
- 4.19 We propose to remove the CAI costs further to our past decisions on the Operational Expenditure Escalator (OE) in RIIO-2 Final Determinations.<sup>15</sup> Details of the use of OE is set out in full under Chapter 4 of the RIIO-2 Final Determinations - ET sector annex.<sup>16</sup> The OE uplift is calculated as per SpC 3.36.<sup>17</sup>
- 4.20 In summary, in RIIO-2, we have implemented an OE for relevant uncertainty mechanisms (UMs) of which the Tower Steelwork and Foundations Re-opener is one. The purpose of the OE, as set out in the RIIO-2 Final Determinations, is to

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<sup>15</sup> Our decision on the OE is set out in full within Chapter 4 of the RIIO-2 Final Determinations – ET sector annex;

[https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final\\_determinations\\_et\\_annex\\_revised.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_et_annex_revised.pdf)

<sup>16</sup> [https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final\\_determinations\\_et\\_annex\\_revised.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2021/02/final_determinations_et_annex_revised.pdf)

<sup>17</sup> <https://epr.ofgem.gov.uk/Content/Documents/National%20Grid%20Electricity%20Transmission%20plc%20-%20Special%20Conditions%20Consolidated%20-%20Current%20Version.pdf>



ensure Electricity Transmission Operators (ETOs) are funded through an automatic mechanism for costs associated with direct activity investments delivered through the UMs. This mechanism provides the ETOs with an allowance for indirect costs when direct activity allowances are funded through the relevant UM and ensure that those indirect allowances are consistent with those set for baseline allowances. Only an efficient direct cost will be funded through the Tower Steelwork and Foundations Re-opener.

- 4.21 Based on this assessment, Table 2 summarises NGET's updated cost estimates, NGET's requested funding and Ofgem's cost assessment.

**Table 2: Proposed adjustments and allowances**

	<b>NGET updated cost estimates 2018/19 prices, as per re-opener submission (£m)</b>	<b>Previously provided baseline funding 2-18/19 prices (£m)</b>	<b>NGET requested funding 2018/19 prices, as per re-opener submission (£m)</b>	<b>Ofgem updated cost assessment 2018/19 prices (£m)*</b>
<b>Steelwork</b>	17.704	5.708	-	13.893
<b>Foundations</b>	4.149	14.381	-	2.860
<b>Pre-reopener submission surveys</b>	1.910	-	-	1.910
<b>T3 climbing surveys</b>	0.349	-	-	0.349
<b>Total</b>	24.112	20.089	4.023 (24.112-20.089)	-

\*Our updated cost assessment for this project is £19.012m. We have calculated this number based on removal of the indirect costs listed in paragraph 4.18 above. This is lower than the previously awarded baseline funding of £20.089m

- 4.22 As our cost assessment arrives at a figure of £19.012m, which is less than the baseline funding already awarded in RIIO-2 Final Determinations (£20.089m), we do not seek to award NGET any additional funding for this project. We therefore propose to award no additional funding for this re-opener application.

## **5. Next steps**

- 5.1 We welcome your responses to this consultation, both generally, and in particular on the specific questions in Chapters 2, 3 and 4. Please send your response to: [catherine.warrilow@ofgem.gov.uk](mailto:catherine.warrilow@ofgem.gov.uk). The deadline for response is 17 March 2023.
- 5.2 We will endeavour to conclude our assessment of NGET's Bespoke Re-opener application with a decision in due course.
- 5.3 We may make licence changes depending on the outcome of our decision, which will be informed by consultation responses. Under SpC 3.33 of NGET's licence, we will adjust the  $TSF_t$  term if necessary. However, if we proceed in line with our consultation position to not award any additional funding, we do not think licence updates would be necessary as we would not need to adjust the  $TSF_t$  term.

## Appendices

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## Appendix 1 – Consultation Questions

**Consultation Question 1:** Do you agree with our view on the suitability of the needs case proposed by NGET?

**Consultation Question 2:** Do you agree with our assessment of the range of options to meet the needs case?

**Consultation Question 3:** Do you agree with our minded-to view of the solution proposed by NGET?

**Consultation Question 4:** Do you agree with our view on NGET's proposed Bespoke Re-opener costs? Please provide reasons to support your views.

## Appendix 2 – Assessment of re-opener application requirements

The table below summarises our assessment of NGET’s Bespoke Tower Steelworks and Foundations re-opener submission against Special Condition 3.3 and the Re-opener Guidance and Application Requirements Document, as required under Special Condition 9.4.

Table 3: Re-opener application requirements

Document	Requirement	Has the requirement been met?
Special Condition 3.33, part A, paragraph 4 <sup>18</sup>	Projects qualify for submission via the Tower Steelwork and Foundations re-opener as a result of clarification of the needs case in relation to Tower Steelwork and Foundations interventions.	Yes
Special Condition 3.33, part C, paragraph 7	Includes detailed justification of the technical need and, where relevant, the consumer benefit that the licensee considers the Tower Steelworks and Foundations interventions proposed will have.	Yes
	Comprehensive survey of overhead line Tower Steelwork and Foundation including clear scored and quantified asset data, that can be compared to historic data sets to show degradation.	Yes
	Cost breakdown sets out: <ul style="list-style-type: none"> <li>• Clear articulation of the selected intervention options</li> <li>• Cost breakdowns which discuss route specific interventions and which can be cross referenced to condition data</li> <li>• Clear articulation and reasoning for any assumptions used</li> <li>• Clear presentation of historic works on the relevant assets and the impacts of this work.</li> </ul>	Yes

<sup>18</sup> More detail is available in the RIIO-ET2 “ET Annex” Final Determinations document, chapter 4. See link: [RIIO-T2 Final Determinations for Transmission and Gas Distribution network companies and the Electricity System Operator | Ofgem](#)

	Adjustments to the value of the $TSF_t$ term that the licensee is requesting and the Regulatory Years to which that adjustment relates.	Yes
	The basis of the calculation for the proposed adjustments to the value of the $TSF_t$ term.	Yes
	<p>The specific works the licensee proposes to deliver, which must include:</p> <ul style="list-style-type: none"> <li>• Climb based surveys for Tower Steelworks</li> <li>• Individual Foundations to be intervened on with sample data to support intervention</li> <li>• An explanation of whether the licensee considers that the adjustment to allowances sought and the works set out in accordance with sub-paragraphs (c) and (e) should be made an Evaluative PCD, including what delivery date and PCD output definition the licensee considers should be specified.</li> </ul>	Yes
Special Condition 3.33, part C, paragraph 8	<p>Application under Special Condition 3.33.4 must relate to costs incurred or expected to be incurred:</p> <ul style="list-style-type: none"> <li>• On or after 1 April 2021; and</li> <li>• Not exceed £73.5m.</li> </ul>	Yes
Special Condition 9.4, paragraph 3	To prepare applications for Re-openers in accordance with the Re-opener Guidance and Application Requirements Document.	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 2.2 <sup>19</sup>	An application accompanied by written confirmation from a suitable senior person within the company that outlines accuracy and quality assurance internal governance arrangements.	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 2.4	Publication of the complete application in a prominent place on the company website, within 5 working days of submission to Ofgem.	Yes <sup>20</sup>
RIIO-T2 Re-opener Guidance and Applications Requirements 3.3	To include a table that maps out which sections of the application relate to individual requirements as set out in the relevant Re-opener licence condition and Chapter 3 of RIIO-T2 Re-opener Guidance and Applications Requirements.	Yes

<sup>19</sup> [Re-opener Guidance and Application Requirements document | Ofgem](#)

<sup>20</sup> <https://www.nationalgrid.com/electricity-transmission/about-us/business-plan>

RIIO-T2 Re-opener Guidance and Applications Requirements 3.4	To provide a justification for not providing all of the required information (if required).	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 3.8	To include a needs case whether or not this is a specified requirement of the relevant Re-opener licence condition or Re-opener Guidance.	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 3.9	The needs case must contain the alignment with overall business strategy and commitments.	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 3.10	To include a clear statement of how the proposed expenditure aligns with the licensee's future business strategy, including consideration of how it relates to the licensee's RIIO-T2 licence or other statutory obligations and, if relevant, its RIIO-3 business plan.	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 3.11	To include a clear statement as to the need for the proposed expenditure or the problem the licensee is trying to address in the context of its significance for consumers and network assets. The affected consumers / assets must be identified and the associated risk being addressed quantified, where possible.	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 3.12	To provide the rationale for the level of expenditure proposed and why this level should be regarded as being efficient.	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 3.13	To include a clear description of the long and short list of options considered and the selection process undertaken to reach the preferred option.	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 3.14	To include a clear description of the preferred option, sufficient to allow us to make an informed decision on if the preferred option is suitable.	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 3.15	To include a clear statement as to any project delivery and monitoring plan for the preferred option.	Yes
RIIO-T2 Re-opener Guidance and Applications	To include an explanation of how stakeholder engagement contributed to the identification and design of the preferred option. A stakeholder engagement may not be necessary where there is	Yes

Requirements 3.16, 3.17	not a material impact on stakeholders, or where the application is driven by statutory obligations.	
RIIO-T2 Re-opener Guidance and Applications Requirements 3.19, 3.20	To provide sufficient cost information.	Yes
RIIO-T2 Re-opener Guidance and Applications Requirements 3.21, 3.22	Cost Benefit Analysis and Engineering Justifications Papers are important sources of evidence that can be included in an application.	Yes



## Appendix 3 – Privacy notice on consultations

### Personal data

The following explains your rights and gives you the information you are entitled to under the General Data Protection Regulation (GDPR).

Note that this section only refers to your personal data (your name address and anything that could be used to identify you personally) not the content of your response to the consultation.

#### **1. The identity of the controller and contact details of our Data Protection Officer**

The Gas and Electricity Markets Authority is the controller, (for ease of reference, “Ofgem”). The Data Protection Officer can be contacted at [dpo@ofgem.gov.uk](mailto:dpo@ofgem.gov.uk)

#### **2. Why we are collecting your personal data**

Your personal data is being collected as an essential part of the consultation process, so that we can contact you regarding your response and for statistical purposes. We may also use it to contact you about related matters.

#### **3. Our legal basis for processing your personal data**

As a public authority, the GDPR makes provision for Ofgem to process personal data as necessary for the effective performance of a task carried out in the public interest. i.e. a consultation.

#### **4. With whom we will be sharing your personal data**

We will not share your personal data with any third parties.

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

Your personal data will be held for six months after the project has closed.

#### **6. Your rights**

The data we are collecting is your personal data, and you have considerable say over what happens to it. You have the right to:

- know how we use your personal data
- access your personal data
- have personal data corrected if it is inaccurate or incomplete
- ask us to delete personal data when we no longer need it
- ask us to restrict how we process your data
- get your data from us and re-use it across other services
- object to certain ways we use your data

- be safeguarded against risks where decisions based on your data are taken entirely automatically
- tell us if we can share your information with 3<sup>rd</sup> parties
- tell us your preferred frequency, content and format of our communications with you
- to lodge a complaint with the independent Information Commissioner (ICO) if you think we are not handling your data fairly or in accordance with the law. You can contact the ICO at <https://ico.org.uk/>, or telephone 0303 123 1113.

**7. Your personal data will not be sent overseas.**

**8. Your personal data will not be used for any automated decision making.**

**9. Your personal data will be stored in a secure government IT system.**

**10. More information**

For more information on how Ofgem processes your data, click on the link to our "[ofgem privacy promise](#)".